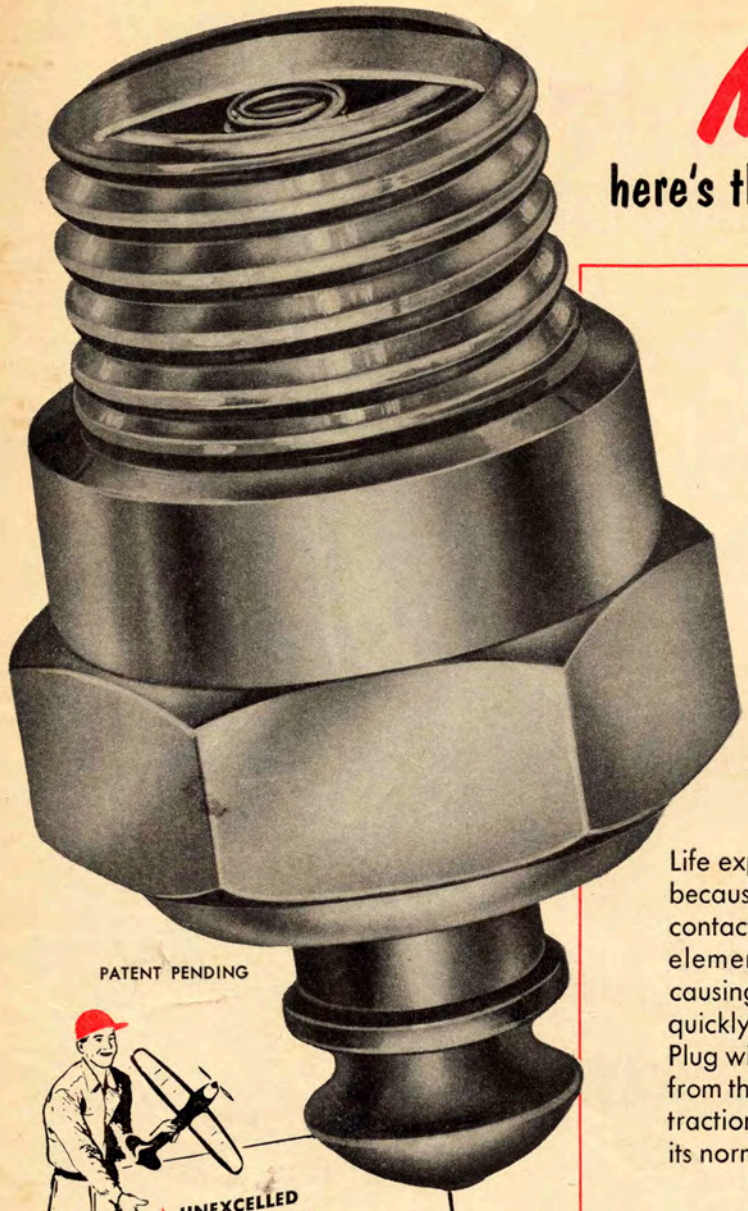
Air Trails®

MAY 1952
35 CENTS

Winning Scalers: Page Racer and Dart Kitten
Reinhardt's "Galloping Comedian" Stunter

Modelers!

here's the glow plug that makes sense



PATENT PENDING

K&B Ever-Glo

WITH PATENTED

LIFE STRETCHER SHIELD

IT'S A REAL BUY... HERE'S WHY

Life expectancy of the average glow plug is short because of extreme hot and cold temperatures contacting the platinum element. The white hot element is constantly bombarded by cold fuel causing rapid expansion and contraction which quickly disintegrates the element. K&B's new Glow Plug with *Life Stretcher Shield* protects the element from the cold fuel... retarding expansion and contraction... thereby adding as much as 5 times to its normal life.

THE SHIELD IS THE SECRET!

75¢

- ★ UNEXCELLED PERFORMANCE
- ★ FITS ALL MAKES OF ENGINES
- ★ BE THRIFTY—SWITCH TO K&B EVERGLO... COSTS YOU LESS IN THE LONG RUN

FOR FUN OR TROPHIES

TORPEDO ENGINES

K&B MANUFACTURING COMPANY
224 E. Palmer Ave.
Compton, California

TORPEDO ENGINES ★ SUPERSONIC FUELS ★ QUALITY LINE ACCESSORIES

SUPERSONIC FUELS
the best fuel on the market—a fuel for every engine—every use

Train Your Eyes

ON AMERICA'S PRODUCTION LINES

It is you — the young men of America who will soon be responsible for making mass production possible by training your eyes on our nation's production lines.

As a graduate Aircraft Maintenance Engineer from PARKS COLLEGE you will have the ability to coordinate men, machines and materials — not only in aircraft production but in many other fields as well.

Your country needs ambitious young men to watch and guide our production lines with trained eyes. The best possible preparation you can acquire is the well-rounded schooling offered by PARKS COLLEGE.

At PARKS you will receive a Bachelor of Science in Aeronautics degree from Saint Louis University — the first university west of the Mississippi. In the 400-year old tradition of Jesuit schools, PARKS teaches you not only how to make a living, but also how to live.

ENTRANCE REQUIREMENTS. Applicants must be graduates from a 4-year high school, of good moral character and demonstrated ability. Next Parks Enrollment Dates — September 2-3, Fall Semester.

PARKS COLLEGE
OF
SAINT LOUIS UNIVERSITY

SILVER ANNIVERSARY
PARKS COLLEGE
1927-1952

2052 CAHOKIA ROAD EAST ST. LOUIS, ILL.

MAIL THIS COUPON *today!*

AIR FORCE ROTC

Complete your schooling — without interruption — and receive a commission as Second Lieutenant in the Air Force Reserve.

PARKS COLLEGE OF SAINT LOUIS UNIVERSITY
2052 Cahokia Road, East St. Louis, Ill.

I am interested in:

☐ Air Transportation ☐ Aeronautical Engineering
☐ Aircraft Maintenance Engineering

Name.....Age.....

Address.....Zone.....

City.....State.....

AIR TRAILS

THE LEADING MAGAZINE OF AIR PROGRESS AND AEROMODELING

Editor: Albert L. Lewis. **Technical Editor:** Alexis Dawydoff. **Editorial Production:** Carl Happel. **Art Director:** W. F. Tyler. **Editorial Assistants:** Rose Borello and Rosalba Accardi. **Special Correspondents**—Washington: Kendall K. Hoyt; West Coast Modeling: Dick Everett.

May
1952
Vol. 38, No. 2

Cover: Northrop All-weather F-89 Fighter—Zboyan

STREET & SMITH PUBLICATIONS, INC.

President.....Gerald H. Smith
Executive Vice President.....Ralph R. Whittaker, Jr.
Vice President and Secretary.....Arthur P. Lawler
Treasurer.....Thomas H. Kaiser

Walter J. McBride, Advertising Mgr., 575 Madison Ave., New York 22; Frank C. Smith, Mid-Western Adv. Mgr., 230 No. Michigan Ave., Chicago 1; West Coast Advertising Representative, Kimball, Menne Co., 1052 W. 6th St., Los Angeles 17, California.

AIR TRAILS published monthly by Street & Smith Publications, Inc., at 575 Madison Ave., New York 22, N. Y. Entered as second class matter at the post office at New York, N. Y. Authorized as second class mail Post Office Dept., Ottawa, Canada.

Copyright, 1952, by Street & Smith Publications, Inc.

35c per copy—$3.50 per year, $7.00 per year in countries of the Pan-American Union; $4.50 per year in Canada; $10.00 per year elsewhere. This issue is Vol. XXXVIII, No. 2. Please advise us if you move; allow four weeks for change of address. Give old and new address when notifying us. Subscription correspondence should be addressed to Subscription Dept., Street & Smith Publications, Inc., 304 E. 45th St., New York 17, N. Y. All characters used in fiction and semi-fiction stories in this magazine are fictitious. We cannot accept responsibility for unsolicited manuscripts or art work. All submissions must include return postage. Printed in U.S.A.

FOR THE READER

8 Air Notes
10 R/C Roundup—Howard G. McEntee
12 The Civil Air Patrol Cadet
14 Airmen of Vision
16 Air Adventurers Club
19 Flight Beyond Gravity—Richard C. Early
22 Air Progress: Mustang Fighter—D. Rolfe
24 Development Highlights
26 Three Views and Odd Views
28 Half-A Free Flight Scale: Curtiss Racer—Walter A. Musciano
32 All-American Pan-Am Plane
34 Radio Control Equipment—Howard McEntee
36 The Miraculous Models
38 Dart Kitten—Paul Palanek
44 Galloping Comedian—Harold Reinhardt
48 "British Built"—Ron Warring
49 Monogram's-Superkit F-51
49 Enterprise's MiG
50 Supermarine F. Mk. 1 Attacker in 3-View—Bjorn Karlstrom
53 How to Make a Drafting Table—Tom Wardlaw
54 Dope Can—"Dopester"
56 Douglas F3D-1 Skynight
60 Western Roundup—Dick Everett
61 American Aircraft Manufacturers
66 Mystery of the Missing Beep Box
68 Modern Model "Maxwell"—Aubrey Kochman
70 Foreign News Notes—H. A. Thomas
71 Contest Calendar
74 Good Ideas!
76 Showcase

FROM THE READER

All communications to the editorial offices should be addressed to Air Trails, 304 E. 45th St., New York 17, N. Y.

The R/C Circuit . . . The Chicago gang ("Chicagoland Radio Control Modelers") would like to say thanks to you for the fine articles on radio control that have been appearing in Air Trails.

We had just about given up when much to our surprise Howard McEntee came through with just what the R/C gang likes to see. Based on the past issues we now know whom to send our news to and have just appointed some of our members to gather news of interest around Chicago.

Clay Freese, President, CRCM

Mystery Stunter Confesses! . . . I happened to read an article in the March issue From the Reader section about the "Internats Mystery Stunter."

The individual that was so overrated happens to be me. I would be very willing to correspond with Philip Paul, who inquired.

I'm from Venice, California. However, right now I'm going through pre-flight down in Pensacola. My address:

Nav. Cad. Duane L. Varner USNR, Class 6-52 Batt. #5, U. S. Naval School, Pre-Flight, N.A.S., Pensacola, Fla.

Tip on Piston Ring Work . . . While reading Mr. Walton Hughes' "Adding R.P.M.'s to Piston Ring Engines" in Air Trails, I found that he forgot to mention one thing that is very important while working piston rings, and this is after removing the piston a mark should be made on the piston, showing the position of the ring gap before the ring is slipped off the piston. This should be done because in an old engine the ring is not perfectly round, due to wear, and if a ring was to be put back on a piston at a different position, any high spot on the ring (or on the cylinder wall) would cause the ring to be offset and a loss in compression would result.

Yves Beaudoin, Ottawa, Can.

Model Annual Mail . . . Received my copy of the Air Trails Annual. Was very pleased with your decision to reserve copies by mail. This will make it possible for all fans to make sure of not missing this fine issue.

You should be very proud of the job you have done. This is the kind of thing that keeps Air Trails in the forefront of the model magazine field.

L. G. Rogers, Magog, P.Q., Can.

. . . I just wanted to express my thanks for a fine mag and your wonderful annual for '52.

Dan Stevens, Albany, Ga.

Seeks Plans for Red Zephyr . . . I have been trying in vain to locate plans for Scientific's old "Red Zephyr" model. Have tried several clubs and old-time modelers. Also the Scientific Co.

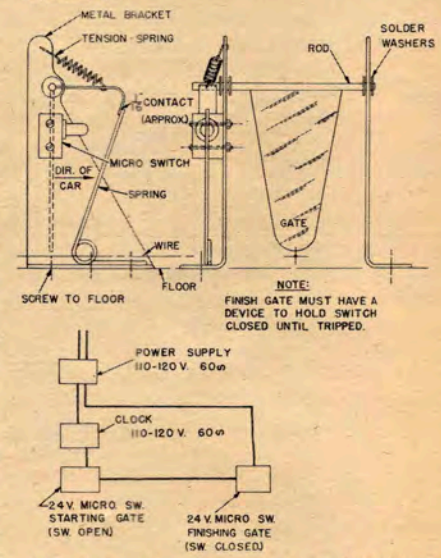
I would appreciate it greatly if you would publish the fact in your Reader's Column in hopes some fellow modeler can inform me as to where I could buy or borrow such plans. Although I didn't have much luck with it in 1937 as my first model (gas), it has the earmarks of a good radio job and would be fun to build again.

Robert Fuller, 111½ So. Eighth St., So. Beloit, Ill.

CO_2 Cars . . . We've been reviving competition runs with little CO_2 powered cars. You remember running info on them several years ago? Well, here's our question—do you have any suggestions on timing devices for these whirlwinds?

Lawson Tyler, Chicago, Ill.

● Here's a copy of the electric timing device which Cal-Aero Technical Institute has made available. They state: change clock gear ratio to increase rpm and recalibrate; clock dial should be calibrated to read in decimal seconds; car when passing through start gate closes circuit, starting timer—passing through finish gate the car opens circuit, thus stopping timer; 24 V. standard aircraft micro switches work satisfactorily on 110 V. line—resistance can be added if necessary.



"AT" for the Record . . . We are in process of compiling a book of press clippings which will become a permanent part of the Squadron's Historical Records.

The March 1950 issue of Air Trails contained material pertinent to this squadron and a copy of it will make a valuable addition to our scrap book.

Lt. Russell B. Tatum, Adjutant, 85th Bombardment Sqdn., Light, USAF

NOTICE TO SUBSCRIBERS

Please advise us if you move, giving old address and new address; allow four weeks for change of address; address all subscription mail to Air Trails Subscription Department, 304 East 45th Street, New York 17, N. Y.

SALES ZOOM

more
-as model builders learn that

COMET DOPE

gives them TOPS in QUALITY—and a BIG JAR for only

10¢

FROM every part of the country comes the same story: sales of COMET DOPE are going up—UP—*UP!* Why? Simply because more and more model builders are learning that COMET DOPE gives them the absolute tops in quality—the newest, truest colors—every desirable feature—in a big, big jar—for only 10c! There's never been any question in our minds as to our policy: we are determined to turn out the very best dope that modern science can perfect—and we're just as determined to keep the price of that big jar at only 10c! COMET DOPE covers like no other, flows on smoothly, dries quickly, makes models look better! COMET DOPE *stays* good in the jar—remarkable resistance to separation and hardening! A full range of up-to-the-minute colors like Insignia Blue and Red, Regal Maroon, Aeronca Orange, Taylorcraft Yellow. From the time you buy—and use—your first jar of COMET DOPE—you'll join the millions of model builders who know that they can pay more—but can't buy a better dope!

COMET CEMENT gives you the most in every way! A big tube for 10c! Dries quickly—holds tight! Three types: Regular—Extra Fast Drying (Hot Fuel Proof Resistant)—Cement for Plastics.

COMET MODEL HOBBYCRAFT, INC.
501 WEST 35th STREET CHICAGO 16, ILLINOIS

SAN FRANCISCO · DENVER · CHICAGO · NEW YORK · BROOKLYN* · NEW ORLEANS

ESTABLISHED 1931

AMERICA'S HOBBY CENTER, INC.
21st YEAR

1952 LARGEST MODEL & SUPPLY FIRM IN AMERICA

The only model store that gives you . . .

1. One year subscriptions to model Airplane News, Air Trails and Flying Models or its equivalent value to our regular customers.
2. 14-Day Money Back guarantee on unused purchases.
3. Unused purchases exchangeable within 14 days.
4. No postage or packing charges—we insure safe delivery ANYWHERE IN THE WORLD.
5. 24 hour service. Mail addresses in Chicago, San Francisco, Denver and New Orleans which will airmail your orders to our N. Y. office for prompt shipment.
6. Most complete model stock in America—gas, rubber, solids, etc. if it's advertised, we can usually supply it.
7. Competent understanding of your modeling problems.
8. No "minimum" orders. Any order is welcome.
9. FREE with engines. 50 ITEMS WORTH OVER $7.00 AT NO EXTRA COST. SEE BOX ON LEFT.
10. FREE rubber wheels, knife, etc., etc., with gas planes. 12 ITEMS WORTH $3.50 AT NO EXTRA COST. SEE BOX ON LEFT.
11. FREE membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES. OVER 90,000 members.
12. FREE illustrated giant 2-color 128 page catalog with every order.

FREE! FREE!
50 items with gas engines, incl.:

(with diesel or glo engines, all needed items are given). Items include • Quality Coil • Everlast Condenser • 3-way Plug Wrench • Hi-Tension-Wire • Stranded Ignition Wire • Insulated Coil Holder • Correct Size Prop • Presto Engine Starter • Complete Instructions • Battery Box • Slide Switch • 24 pg. Engine Manual • 4 Mounting Bolts • 4 Mounting Nuts • 4 Wiring Lugs • Spark or Glo Plug • Identification Tags • Motor Cover • Speed Indicator • Log Book • Trouble Shooting Chart • No. 70 Oil • Membership in Modelcrafters of America • A H C Guaranty • 128 pg. Giant 2-Color Catalog • Plus Free Postage, Packing and insurance if ordered by mail.

12 items with gas planes incl.:

• Correct Rubber Wheels • Pro All-Metal Knife • Giant Construction Manual • Speed Indicator • Log Book • Complete Full Size Plans • Insignia • Membership in Modelcrafters of America • 128 pg. Giant 2-color Catalog • Plus Free Postage, Packing and insurance if ordered by mail.
(Premiums on Planes selling at over $1.50 only)

N. Y. CITY MODELERS

TWO STORES TO SERVE YOU!
Largest stock in the country at either of our two stores . . .
156 W. 22nd St., New York City
1065 Broadway, Brooklyn, N. Y.

Experts on hand to help you with your problems. Complete stock including engine parts and service at both stores.

Copyright 1951 America's Hobby Center, Inc.

ENGINES

GLO ENGINES

Atwood Wasp (FF)	(AA)	6.75
Atwood Wasp (U-C)	(AA)	6.50
Baby Spitfire	(AA)	5.45
Baby Spitfire Pkge.	(AA)	5.95
Cox .09, .15, or .19	(A)	8.95
Forster G. 29 Glo	(B)	14.25
Forster G. 31 Glo	(C)	14.25
Fox 29	(B)	14.95
Fox 35	(C)	14.95
Fox 59 Stunt	(D)	29.95
Hornet 199	(A)	19.95
Hornet 199 Airc.	(A)	23.90
Infant Torpedo	(AA)	5.50
K & B Glo Torp 29	(B)	15.95
K & B Glo Torp 32	(C)	15.95
K & B Torpedo .049	(AA)	6.75
K & B Torp. Jr.	(AA)	5.50
K & B Torpedo 19	(A)	13.95
Mohawk Chief Glo	(B)	9.95
Ohlsson 23 Rc Deluxe	(B)	11.95
Ohlsson 29 Glo	(B)	13.95
Ohlsson 33 Glo	(C)	13.95
Ohlsson 29 Marine	(B)	14.95
Ohlsson 60 Glo	(D)	13.95
O.K. Bantam Glo	(A)	9.95
O.K. Cub .099	(A)	6.95
O.K. Cub .099 Pkge.	(A)	7.75
O.K. Cub .039	(AA)	4.95
O.K. Cub .049	(AA)	5.25
O.K. Cub .049 Pkge.	(AA)	5.75
O.K. Cub .074	(AA)	5.95
O.K. Cub .074 Pkge.	(AA)	6.75
O.K. Cub .049 Kit	(AA)	4.95
O.K. Hothead Glo	(B)	10.95
O.K. Super 60 Glo	(D)	11.95
Royal Spitfire	(AA)	7.95
Spitzy	(AA)	4.45
Spitzy Senior	(AA)	5.45

IGNITION ENGINES

Cobra	(C)	12.50
Dennymite	(C)	6.95
Forster 99	(E)	19.75
Hornet 60	(D)	10.95
Judco Kit		6.95
K & B Torpedo 29	(B)	18.50
K & B Torpedo 24	(B)	16.50
Merlin	(B)	11.95
Mohawk Chief	(B)	10.95
Ohlsson 23 RV Deluxe	(B)	12.95
Ohlsson 23 Rotary	(B)	14.95
Ohlsson 33	(C)	14.95
Ohlsson 60 Luxe	(D)	14.95
O.K. Hothead (Sup 29)	(B)	12.95
O.K. Super 60	(D)	13.95
O.K. Twin	(E)	55.00
Phantam P-30	(B)	13.95
Ram	(B)	6.75
Regent 29	(B)	9.95
Super Cyclone Dual	(D)	13.95
Super Cyclone	(D)	12.95
Thor	(B)	9.95
Thor Kit	(B)	6.95
Wasp Twin	(D)	29.50
Wetsen	(B)	15.00

AIR ENGINES

O.K. C'0 2		5.95

JET ENGINES

Dyna-Jet Redhead		35.00
Jetex 50		4.50
Jetex 100		4.50
Jetex 200		5.95
Jetex 350		8.95

ELECTRIC MOTORS

Dynamite	1.98
Imp Outboard	3.50

ENGINE PARTS!!

EVERY part for EVERY ENGINE listed on these pages is IN STOCK at America's Hobby Center. Send today for the parts you need to keep your engine in flying condition.

HO RAILS

Did you know A.H.C. now carries a complete line of HO? Write in for your needs!

FREE-FLIGHT PLANES

Baby Phoenix 36" AA	1.75
Bootstrap 40" AA	2.50
Buccaneer B Special 54" B	3.95
Champion 36" A-AA	2.50
Civy Boy 24" AA	1.50
Civy Boy 31" AA	1.95
Commanche 36" AA	2.75
Dakota 24" AA	2.75
Folly 32" AA	1.75
Fu-bar 36" AA	1.75
Fu-Bar 65 65" B-C	6.95
Hawk 27" AA	1.80
Jetlecopter (Jetex 100)	3.75
Junior Phoenix 36" A	2.25
Lil Rascal 27" AA	1.50
Lift Master 34" AA	2.25
Little Twister 30" AA	1.50
Lil Rascal 27" AA	1.50
Luscombe Sedan 76" C-D	7.50
Luscombe Silvaire 45" A-B	3.00
Mini-Hogan 34 34" AA	1.95
Mini-Hogan 45 45" AA	2.95
Navajo 36" AA	2.50
Nomad 18" AA	1.75
PAA Master AA	2.50
Powerhouse 33" AA	1.75
Powerhouse 41" A	3.95
Powerhouse 56" B	4.95
Phoenix Flash 32" AA	1.75
Phoenix Skipper 34" AA	2.25
Profile Powerhouse 24" AA	1.00
Sandy Hogan 70" B-C	5.96
Scot Free 34" AA	2.95
Shadow 32" AA	1.95
Sioux 36" AA	2.75
Skylark 31" AA	2.50
Sniffer 29" AA	1.75
Sport Prince 55" AA	1.95
Super Brigadier 58" B	4.95
Super Flash 53" A-B	4.50
Taylor Cub 35" AA	2.95
Trixter Cub 29" AA	2.00
Trixter Pixie 26" AA	1.25
Yank 23" AA	1.50
Zeek 33" AA	2.50
Zeebin 33" AA	2.50
Zeke 60" A-B	4.95
Zipper 32" A	2.50

U-CONTROL PLANES

A12 Twin 25½" AA	2.95
Aerobat (Whip)	3.95
Aeronca Sedan 22" AA	1.95
A. J. Fireball 36" B-C-D	6.95
Aeromite 17" AA	5.95
All Amer. Trainer 21" AA	1.75
All Amer. Stunt Trainer Jr. 25" A-AA	2.50
All Amer. Stunt 36" A-B	4.95
All Amer. Sr. Stunt 51" B-C	5.95
Baby Ace 18" AA	2.50
Baby Cinch 30" B-C	2.50
Baby Clown 22" AA	1.50
Baby Di-Doe 21" AA	1.75
Baby Era 18½ AA-A	1.95
Baby Era Ripe 16" AA	2.50
Baby Sky Box 36" A-B	2.95
Baby V Shark 20" A-B	2.95
Baby Barnstormer 22" AA	2.95
Barnstormer 47" A-B	5.95
Bat 32" C-D	2.00
Bearcat 35" C-D	4.95
Bee 24" B	1.50
Beechcraft Half A 16" AA-A	2.95
Ben Howards Pete 30" B-C-D	6.95
Bipe Stunt Train. 22" B-C-D	3.95
Boeing P26A 18" AA	2.95
Boeing P26A 27" A-B	6.95
Brave 36" A-B-C	4.75
Bug 17" A	1.00
Cessna 22" AA	1.95
Cessna 26" B-C	5.95
Chief 51½" A-B-C-D	7.50
Corsair 17" A-AA	2.95
Curtis P40P 20" AA	3.45
Di Doe 28" A-B-C	3.95
Dinco Spl. 24" C-D	7.95
Douglas Navy Skyraider (Plastic) 12½" AA	5.00
Duster 15" AA	7.50
Dynamic 26" A-B	3.50
F4S Supersonic 20" AA	2.95
F4S Supersonic (Incl. Engine)	7.95
Fire Baby 19" AA	2.50
Firebaby (incl. Engine)	7.50
Flip-Flap 24" A-B	3.50
Flivver 24" B-C (all alum.)	3.95
Flying Clown 28" A-B-C	1.95
Flying Silver Saucer (4 fit. Dia.)	2.95
Freshman 9 24" A	2.48
Freshman 19 30" A	2.98
Freshman 29 36" B	5.96
Great Lakes Trainer 27" A-B	5.95
Guided Stac 24" A-B-C	5.95
Guided Starlet 24" AA	2.75
Hell—Razor 14" A	5.95
Hell—Razor 15" B	6.50
Hell—Razor 18" D	6.95
Hell—Razor 9" AA	2.00
Howard Ike 20" AA	3.00
Infant Wagon 20" AA	1.95
Junior Stunt 9 27" AA-A	3.48
Junior Stunt 19 34" A	3.98
Junior Stunt 29 40" B	4.98
Key 29" B-C	5.50
Key—Det 18" AA-A	2.95
Kingpin 28" A-B	3.95
Knockout ..18" AA	2.50
Lil Dupe Zilch 42" A-B	3.95
Little Arc 16" AA-A	1.95
Little Bipe 16" AA-A	1.50
Little Devil 18" AA-A	1.50
Little Mustang 18" AA	1.95
Little Sabre 18" AA	1.95
Little Schnoe 17" AA	1.50
Luscombe Sedan 26" AA	1.25
Maverick 24" AA-A-B	1.00
Minnow 28" A-B-C	5.95
Mini-Zilch 18" AA	1.25
Mosquenge 36" B-C	4.95
Mr. Mulligan 32" B-C (Sterling)	4.95
Mustang 27" A-B (Berkeley)	5.95
Mustang P51 19" AA (Airlane)	1.25
Mustang P51 36" B-C (P.D.Q.)	2.95
Mustang (Sterling) A-B-C 38"	2.95
New Era 28" A-B-C	4.95
N.A. P51 16" AA (cons)	2.95
No. Amer. T6 (SR3) 31" A-B-C	4.96
Pacemaker 22" A	3.95
Pee Wee Pup 17½" AA	.95
Pee Wee Pursuit 16" AA	1.25
Peter Pan 16" AA	1.50
Phantom Era 28" A-B	3.50
Piper Cub ..22" AA	1.95
Piper Cub Coupe 35" A-B	2.95
Piper Cub Trainer 23" AA	1.95
Piper Vagabond 36" A-B-C	3.95
Pitts Special ..25" A-B	4.50
Polish Fighter 36" B-C-D	5.95
Presto Liner 20" A-B-C	5.95
Primer 18" AA	1.40
PT Trainer 36" A-B	2.95
Puddle Jumper 19" AA	1.00
Quest 30" B	4.95
Ringmaster 42" B-C	2.95
Rookie Jr. 18" AA	1.50
Rookie Trainer 36" B-C-D	2.95
Ryan S. T 36" B-C	5.95
Scout 24" A	2.50
SE 5 17" AA	2.50
SE 5 32" B-C-D	5.95
Senior 9 27"	3.48
Senior 19 34"	3.98
Senior 29 39"	4.98
Senor Puddle-jumper 25" A-B	1.95
Sharpy 47" C-D	4.95
Sky Box Trainer 38" B-C-D	3.95
Skyleader 18" AA	2.50
Sophomore 9 26" A	2.48
Sophomore 19 33" A	2.98
Sophomore 29 39" B	4.98
Speedster 12" AA-A	2.50
Speedwagon 20 12" A	3.95
Speedwagon 30 15" B	4.95
Speedwagon 40 15" C-D	5.95
Spitfire 20" AA	3.95

BURIED IN THIS AD
are most of the new items. Sometimes there isn't time or space to include them. But, if available, we have it.

Super Knock-Out 24" A-B	3.50
Super Squirt 21" (Jet)	5.95
Super Stunt Rant 20" A	2.25
Sweet Chariot 18" AA-A	2.50
T-28 N.A. Trainer 30" B.C.	5.96
Taylorcraft 32" A.B.C.	2.95
Thunderbolt 40" C-D	4.95
Trail Blazer 24" B-C-D	2.95
Trixter Babe 26" AA	1.25
Trixter Invert Jr. 40" A-B	3.95
Trixter Prof. Trainer 32" A-B	3.50
Trixter Profile 32" A-B	2.50
Trixter Profile 38" B-C	3.50
Trixter Twin Profile 47" B-C	5.00
Tuffy 24" AA-A	1.98
Vampire 40" B-C	4.50
Viking 51" C-D	5.75
Vixen 21" AA	1.95
Waco 32" B-C	5.96
Warhawk 32½" B-C	5.95
Warrior 36" A-B-C	4.95
Wee Dupee Zilch 24" AA	2.95
Wee Willie 18" AA-A	1.95
Whirlaway 11" AB	3.95
Wildfire 23" B-C-D	1.95
Wing Ding 18" AA-A-B	2.25
Wing Dingus 16" AA	2.25
Yak 38" B-C	2.95
Yank 23" AA	1.50

ACCESSORIES

FUELS Express Collect ONLY (Cont'l U.S.A.) Total Minimum Order $3.00 (can be part fuel). No C.O.D.'s.

For Ignition	Fits	Qt's
Ohlsson #1, #3	.85	1.60
Power Mist #6	.65	—
For Glo		
Ohlsson #2, #4	.85	1.60
Ohlsson AA	.85	—
Powermist Glo	.95	—
Powermist Spitfire	—	1.60
Powermist Infant TD	1.00	—
Ranger Glo	.90	—
Testors 39	.75	—
Dynaglo	.85	—
Ranger AA	.90	—
Blue Blazer #1	.70	—
Blue Blazer #2	.80	—
Ranger & Infant	.90	—
OK Cub	.85	—
Spitzy	.85	—

SPECIAL SOUVENIR BARGAIN

The manufacturer of a well-known engine, after selling 30,000 at $9.95, has decided to go out of production. We have his remainder of 1,000 complete sets of finished and unfinished castings and parts: Cylinder, piston, piston pin, connecting rod, needle valve, gas line, timer, crankshaft, crankcase, cam, etc., including screws, gaskets, nuts, etc.

You get a complete set, except spark plug and tank. An interesting souvenir of a model engine in the raw for your den or desk.

No. J9 . . . $1.00 per Complete Set

SPECIAL BARGAIN IN PROPELLERS

SPECIAL BARGAIN IN PROPELLERS
15 ASSORTED FOR $1.00

We have purchased 50,000 assorted gas model propellers from the country's largest prop manufacturer.

They are ALL PERFECT and range from Champion semi-finished (listing at 5 for $1.00) to finished and lacquered props that sell up to 45¢ each regularly. Various pitches, in sizes from 7" to 14".

No selections, please, but we will send you a free assortment of 15 for $1.00, if accompanied by an order for anything advertised in this magazine. MONEY BACK GUARANTY.

Propeller Sale—8 For $1.00

We don't believe in hoarding, but you won't get a bargain like this anywhere else.

By making a trestendous purchase, AHC has acquired from Rite-Pitch a fine line of finely finished and lacquered high grade, square-tip propellers at a very low price and is passing the savings on to you.

8"6p.; 8"8p.; 9"6p.; 9"8p.; 10"6p.; 10"8p.; 11"6p.; 11"8p.; 12"6p.; 12"8p.
ALSO 8"3p.; 5½"4p.; 6"3p.; 7"3½p.

Sportwing 36" A-B-C	3.95	Supersonic 100	.80 —
Square Tip A-B-C	5.75	Supersonic 1000	1.00 —
Stinson Sta. Wagon 43" B-C-D	5.50	Red Devil	.65 1.15
Stinson ..22" AA	1.95	Supersonic Ultra Glo	.90 —
Streamliner 25" B-C-D	4.00	Pouring Spout For pint cans	.10
Stunt Rant 16" AA	1.25	Hot Fuel Proofer .25, .35, .45 & .50	
Stuntmaster 40" B-C	5.95	**PROPELLERS**	
Stuntwagon 30 44" B-C	5.95	Rite Pitch or Super Stunt	
Stuntwagon 58" D	7.95	8", 9", 10" in 4, 6, 8 pitch	.25
Super Clown 38" B-C	2.95	11", 12" in 6, 8 pitch	.35
Super Duper Zilch 52" C-D	5.95	12", 14" in 6, 8 pitch	.50

Scamper Plastic 5½" 3p., 6" 4p. .25; 9" 6p., 45 10" 10p., 11" 8 p. .65	
Super Spl. 8", 9", 10" in 4, 6 or 8 p.	.15
Veco 6" 3p, 4p, 7" 4p, 5p, 8" 5p, 6p, 9" 6p., 7p. (6"—25¢; 7" & 8"—30¢ 9"—35¢)	
Kaynar 5/3, 5½/4, 6/3, 6/4, 6 5—15¢; 7/4—20¢	
Also Ohlsson, Flo-Torque, Power, Top Flite, Tornado, Testors, etc.	

RUNNING & TEST BLOCKS
E-Z Running Stand 1.50

METAL GAS TANKS
Dale Stunt Tanks—All Sizes .65
#1—1½x1¼x3½; #4—3¼x1¼x3½
#2—2¼x1¼x3½; #6—1¾x1¼x3½
#3—2½x1¼x3½; #12—3¼x1¾x3½
#18—2¾x1¼x3½
Froom: 1½x1½—2 bor, or ver. .50
1½x1½x2 Sq. .60
1½x 2½x2½ Wedge .80
1½x1x2½, ½-Rod Stunt .80
Also Museo, Berkeley, Arme, Pylon, Berkeley, etc.

IGNITION COILS
O.K. ..... 1.50 Rogers 2.00
O.K. Twin ..... 4.00 Wilco 1.95

CONDENSERS
Regular —.20 Smith Metal .35

SPARK & GLO PLUGS
Arden Glo (V2 or V3) .65
Champion Glo V, V2, V3 .75
#2—2¼x1¼x3¼ #2—3¼x1¼x3¼ V, V2, V3, VR1, VR2 .50
McCoy Hot Point .65
Ohlsson Glo (V, V2 or AA) .65
O.K. Glo-plug (V2 or V3) .50
Spare washers .05

IGNITION ACCESSORIES
6 ft. Hook-up wire .25
Austin Booster Plug-in .30
Midget Switch: slide—.25 Turn .50
Ohlsson Snap-Pack .35

PROP SPINNERS
1½"-.85¢; 1¾"-.90¢; 2"-.95¢; 2½"-1.10
3" Needle Nose 1¾" dia. 1.15
2½" 1.20
Plastic 1½" .50
Scamper Plastic 1¾", 1½", 2", 2½" .45

WHEELS
Semi Pneumatic (pr) 2" 1.10
2½" — 1.25 3" 1.75
Sponge Rubber (pr) 1½"-1" 30¢
1¼"-1" 35¢ 1¾" ..... .40
1¾"—60¢, 2" ..... .75
Tail Wheels 1" ..... .15
Treaded Pneu. (pr) 1½" or 1½" 1.25
1½"; 2"—50¢; 2½", 2½"—60¢
2½" 1.00
3" 1.25
3½" 1.50

AA ACCESSORIES
Shut-off Valve (state engine) 50¢ & .65
E-Z Minimount ..... .85
.004 or .006 x 2—35 ..... .50
.006 x 2—52 ..... .50
Spinners (state engine) ..... .60
Presto Starter (state engine) ..... .25
Props (state engine) ..... .15 .25
Tanks (state engine) ..... .50, .60, .75
Neoprene (ft) ..... .15
Fuel Tubing ..... .10
AA Univ. Coupling ..... .60

MISCELLANEOUS
Batt. Box Pen., Medium, Regular .40
Brass Tubing 1/16", 3-32", 1/8" .20
Copper Tubing ¼" OD, per ft. .40
Finger Guard ..... .15
Fuel Pump pt. ..... .65
Presto Disc Starter ..... .25
Metal Motor Mounts, 8cm—30¢; 10cm & .65
Needle Valve Exten. flexible .25
Neoprene Tubing, per foot .50
Transparent (reg. or AA) ft. .15
Spitfire Timer Valve 2.95
No. 70 oil, 3 oz.—25¢; pint ..... .60
Propeller Reducer 19" set of 2 ..... .50
Plug Wrench, 3-way—15¢; 4-way .25
Flywood (6"x12"), 1/32" ..... .20
1/16"—25¢; 1/8"—30¢; 1/4" ..... .35
Silk per yard 1.50
Socket Plug Wrench, 4-way ..... .60
Splinter Starter 5.00
Flexible Needle Valves: Cub, Royal Spitfire, Spitzy—19¢; Wasp, Baby Spit, Infant, Torp Jr., Torpedo 49—50¢; Universal Needle Valve (A-B-C engines) 50¢; Flexible 75¢
Vibratac 2.00

DELUXE HOBBY CATALOGS

25¢ 128 page 2-color 9" x 6" catalog, *fully illustrated*. Over 10,000 items, including gas, glo, diesel, jet and CO2 engines, engine and rubber powered planes, boats, cars, solids of all kinds, tools, engine parts, etc., etc. PLUS many articles on building and flying, trouble shooting, etc., etc. PLUS pages and pages of accessories, engine parts, decals, wood, dope AND EVERYTHING.

10¢ 64 page 2 color 9" x 6" *illustrated catalog*. Free flight and U-Control planes, engines (gas, glo, jet, diesel, Co-2), accessories and supplies, rubber powered planes, solids, boats, cars. Over 5000 items. PLUS articles on building, doping, flying, engines, etc., etc.

FREE Fine jumbo catalog of thousands of hobby items: Plane, boat, car, engines, accessories, solids, gas, rubber, etc., etc.

CANADIANS! You save plenty by ordering from us. Send remittance in full.

SALE SPECIAL
WINSTON GAS ENGINE LIBRARY

FIVE BIG BOOKS FOR ONLY . . . 1.49

REGULAR PRICE $1.00 EACH
A $5.00 VALUE FOR ONLY $1.49

Here is a BARGAIN no modeler (beginner or expert) should pass up. FIVE separate volumes covering every phase of gas and glo engine operation, plus building and flying powered free-flight and control line airplanes, plus lots of other information on boats, cars, forming model clubs, etc., etc. All written by Bernard B. Winston, whose books and articles have been read by over 1,000,000 modelers. Well over 200,000 copies of these books were sold at $1.00 each.

1. **MODEL GAS ENGINE HANDBOOK** — 150 pages, 80 illustrations. A complete manual of the theory and practice of Model Gas Engine operation. Includes specifications of principal engines, blueprints, directory, dictionary, etc.
2. **GLO ENGINE HANDBOOK** — 64 pages, 80 illustrations. A complete manual on Glo Engines—their theory, operation and care. Includes everything from buying your engine to breaking-in, flying and trouble shooting, plus dictionary, directory, prop size chart, etc.
3. **GAS MODELERS GUIDE** — 176 pages, 92 pictures and diagrams. Here is a book that really tells you about modeling. Contents tell all about free-flight and control-line gas model cars and boats, radio control, winning contests, forming clubs, AMA rules, club directory, complete dictionary, etc., etc.
4. **CONTROL-LINERS** — 157 pages, 160 illustrations. How to build and fly them. Includes everything: how the sport started, types, designs, construction, power plant, propellers, contests, doping and painting, etc., etc. Covers the subject from A to Z.
5. **GAS MODEL PLANE CONSTRUCTION** — Over 152 pages and 200 pictures and diagrams. Give you the answers to every problem from tools needed to repairing the model. Covers free-flight and U-Control. Chapters include joints and structures, fuselages, wings, engine and accessory mounting, sanding and finishing, assembling, covering, doping and finishing, repairs, etc., etc.

ALL 5 VOLUMES—700 PAGES Only $1.49

DOPES (Cont'l U.S.A. Only)

Aerogloss Hot Fuel Proof (20c and 60c sizes) Fillercoat, Cement, Plastic Balsa, Cessna Green, Cessna Gray, Orange, Yellow, Corsair Blue, Curtiss Blue, Fokker Red, Black, Lambert Gray, Aluminum, Stearman Red, Stinson Green, White, Cream, Maroon.
COMET (10c) Cream, Gray, Red, Gloss Top Coat, Horizon Blue, Black, Insignia Blue, Orange, Maroon, Gold, Sanding Sealer, Silver, White, Yellow.
Speed-o-lac (10c and 25c sizes) Aeronca Orange, Army Yellow, Aeronca Yellow, Banana Liquid, Black, Gray, Chocolate Brown, Cub Blue, Cub Cream, Cub Green, Cub Yellow, Gloss Top Coat, Insignia Blue, Insignia Red, Metallic Blue, Olive Drab, Sanding Sealer, Silver, Stinson Green, Taylorcraft Cream, Taylorcraft Yellow, Tennessee Red, Maroon, Waco Blue, White, Undercoater, Dark Gray.
CLEAR DOPE Aerogloss 20c and 55c; Comet 10c and 25c; Speed-o-lac 10c and 25c.
THINNER Aerogloss 20c and 35c; Comet 10c and 25c; Speed-o-lac 10c and 25c.

U-CONTROL ACCESSORIES

Adjustable Push Rod set	.25
Bellcrank 2" or 3"—10c, 4"	.15
BERKELEY control lines .098, .010, .012"-2-50	.50
.098, .010, .012, .014 2-70	.65
.098, .012, .016: 2-150'	1.00
Stranded .015, .021 55 1.00: 70' 1.25, 200'	3.50
Berkeley Metal Flight Reel	1.25
Berkeley Metal Handle	1.00
Controliner Flight Reel (with wire) AA—1.85; A-B	2.25
Elevator control horn; Veco	.30
Elevator hinges 4 for	.10
E-Z Plastic Control Handle	.85
Flex Lead-in Wire AA or AB 3 ft.	.15
Instant-Use Handle, 5 or 6"	.50
Luxon Clips A. B. C or D Pr	.10
PYLON control lines .098, .010, .012, .014, .016 dia. 2-52' lines	.60
.098, .010, .012, .014, .016 dia. 2-70' lines	.75
Flexible 2-52' 1.50; 2-70'	1.95
Pylon Control line Reel	1.25
Pylon Plastic Handle 5"	.65
Red Pal Reel	1.00
Simplex Handle & Reel	1.50
Stunt Bellcrank & Elev. Horn	.25
Swivels, small 15c pr.; large	.20
Tommy Handreel	1.75
U-Reely Contr.—7.50; cable	8.50
U-Reely Remote	12.50
Veco Bellcrank	.30 & .25
Wood Control handle	.25

MODEL BOATS

Chris-Craft 26" C-D	6.75
Chris-Craft Express 25" B-C-D	5.75
Chris-Craft Runabout 25" BCD	6.25
Harvey 25" B-C-D	6.25
Owens Yacht 26" B-C-D	6.25
Vineyard 25" BCD	6.25
Dumas Electric Drive Unit for 6 above ships	4.00
Buckeye prefab. 17" A-B-C	4.95
" Cabin Cruiser 17" ABC	5.95
C.C. Riviera ..17" AA	2.95
C.C. Runabout 12½" A-A-A	3.50
C.C. Special 12½" AA-A	3.50
Higgins Speedster 16½" AA-A	4.95
Richardson Sedan 17" AA-A	5.95
Royal Skimmer Deluxe	10.95
Spiterall Plastic (Incl. Engine)	14.95
Sterling C.C. Racer 15" AA-A	7.95
C.C. Exp. Cruiser 14" AA-A	3.50
Rescuer 12" AA	3.25
Sea Maid 12" AA	2.95

THIMBLEDROME

Cox .15 or .099 Engine only	8.95
Cox .199 Engine only	8.95
Cox car ready to run with engine	13.95

RACE CARS

Half-pint (AA)	2.95
Ohlsson Complete	19.95
Tornado Complete	12.50

WE SELL DEALERS TOO!

Did you know that Mod-Ad Agency, Inc., the wholesale affiliate of America's Hobby Center, Inc., is one of the fastest growing jobbers in the business?

We know your problems because we have your problems!

Write for sample catalog, ready for your imprint and our famous 9-point program. . . . The reasons why more dealers are doing business with us. Includes our 60-Day return privilege, etc. Special Date if you are going into business. We ship anywhere in the world.

Write to **MOD-AD AGENCY, Inc.**
156 WEST 22nd STREET, NEW YORK 11, N. Y.
1067 BROADWAY, BROOKLYN 21, N. Y.

AMERICA'S HOBBY CENTER, Inc. - New York City, Brooklyn, Chicago, San Francisco, Denver, New Orleans

Complete FLYING OUTFITS

WORTH TWICE OUR COMBINATION PRICE!

WE WILL SUPPLY
A complete flying outfit with your own choice of any advertised engine or plane—and save you money. Just order from us or write for price.
IF IT'S ADVERTISED, WE HAVE IT

IT ISN'T OFTEN that you get the chance to buy, at less than half price, a U-Control Plane, Engine and All-Accessory Outfit with your own choice of a well known FACTORY ASSEMBLED ignition or glo engine. Everything carries the famous America's Hobby Center as well as the manufacturer's guarantee.

Even if you are a beginner, you won't have trouble building and flying any of these flying outfits, full-size plans of any easy to-build and fly plane, every accessory you will need, complete instructions, etc., etc. If you are an old-timer at building and flying model planes, we don't have to tell you what these bargain outfits are really worth.

Thousands of these complete units have already been sold. They have met with enthusiastic reception because they represent a value unheard of before in the modeling field. The price is so low that we cannot sell to dealers. You really save from $10 to $12 by buying the complete, packaged unit—everything is engineered by experts for a perfect flying combination.

YOUR OWN CHOICE OF ENGINE, PLANE, PLUS ALL ACCESSORIES, INCLUDING: Correct size finished propeller • 3-way plug wrench • Presto Engine starter with handle and card • Speed indicator tables • Log Book • Motor cover • Spark or glo plug with gasket • Complete engine instructions • 24 page Gas Engine Theory Manual • Engine adjustment chart • Metal fuel tank and gas line • Metal Battery box • Wilco Quality Coil • 12" Hi-tension lead wire and end clips • 18" insulated ignition wire • Ignition slide switch • Coil holder and mount • Everlast condenser • SAE #70 Oil • 4 ignition wiring lugs • Spark plug gauge set • 2 plane identification tags • 72 insignias • GIANT book on Control-liners, How to build and fly them • Cement • Sandpaper • "Pro" all-metal knife and blade • Metal bellcrank with bolt, nut and washer • Elevator horn • Elevator hinges • Lead-in wire • Push-rod wire • U-Control handle • 100 ft. U-Control stainless steel wire & reel • Membership in Modelcrafters of America • 128 pg 2-color catalog • Postage • Packing • Insurance. Ignition parts not needed with glo-engine not included.

YOU WON'T GET OTHER BARGAINS LIKE THESE!

$8.50

YOUR CHOICE $10.00

YOUR CHOICE $12.50

YOUR CHOICE $13.50

YOUR CHOICE $15.00

PLUS

TRAIL BLAZER

TRAIL BLAZER Model Plane with carved lower fuselage-half, fully formed aluminum upper half. Balsa sheet wing, no tissue used. Balsa tail surfaces, plywood engine mount. Schematic drawings with step-by-step plans. Rubber wheels, detail paint schemes. 24" wingspan.

PLUS ALL ACCESSORIES LISTED ABOVE

NEW .099 UNIT

Includes all 3 items

For ease of assembly, for trouble-less operation and for real effortless U-Control flying, these units are the answer to the modeler's dream. Even the beginner will have no trouble in assembling the outfit in one evening and be completely ready to fly the next morning.

1 *You get a fine engine*

2 *PLUS* Your choice of 2 completely prefabricated kits

3 *Plus all accessories*

COST ONLY $9.95

AA FLYING OUTFITS

These are the new pint-size glo engines that are so tiny (1 to 1½ ounces) but develop plenty of power for free-flight or U-control flying.

Your own choice

INFANT or CUB .049 $7.25

SPITFIRE or Spitzy Sr. $7.75

CUB .074 or K. & B. .049 $8.25

Plus your choice of planes: All planes prefabricated, easy to build and fly

Powerhouse free-flight

Circle King 30" U-control

Puddle Jumper 19" U-control

Plus all accessories

BARGAIN OUTFIT

One of the biggest bargains we have ever offered. Over $10.00 of merchandise for only $7.50.

1 *YOUR CHOICE OF*

2 *PLUS* your choice of 4 prefabricated Scientific 22" span u-control planes.

3 *PLUS ALL ACCESSORIES*

COST ONLY $7.50

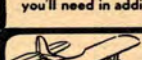
AEROMITE $9.95 — A really beautiful red plastic job. 17" Wingspan with Baby Spitfire engine, prop spinner, tank, etc., already installed. Shock-absorbing spring-steel landing gear. Jim Walker U-control for precision and stunt flying, plastic control handle, nylon control cord.

AJ FIREBABY $7.50 — Beautifully finished and painted, even fuel-proofed. 19" span. Includes new "slow-motion" propeller and engine.

DOUGLAS NAVY SKYRAIDER $9.95 — All plastic model including K & B Torp Jr. engine. Landing gear with aluminum rubber-tired wheels, decals, tank, spinner, etc., etc. Includes nuts and bolts for minor assembly. Fine U-Control model.

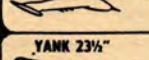
READY TO FLY

These complete outfits don't give you the fun of building. They are ready-to-operate. All the fun's in the flying. All you'll need in addition is fuel and battery. — Nothing to Build


DUSTER $10.95 — True scale bi-plane u-control model of the type used to crop-dust, stunt and train many pilots. Includes everything including dusting tube, pilot, etc., etc., plus Spitzy Senior engine. Beautifully finished in yellow and blue.

F45 $9.95 — Swept wing supersonic fighter. Completely ready to fly 20" u-control model designed for the novice or the champ. Includes Spitzy Senior engine, pilot, canopy, rubber wheels, etc. Beautifully finished in silver.

F65 $12.95 — Super Sonic Fighter. Big swept wing U-control job powered by Royal Spitfire .065 engine. Another Mel Anderson beauty. Includes wing tanks, machine guns, rockets, etc.


YANK 23½" — $5.95 CHOICE OF — HAWK 27"

Equipped with O.K. .020 and all accessories. All balsa free-flight, championship models. Top notch performers.

SOLDIERS! SAILORS! MARINES!

Orders placed through us get special attention. We understand your problems and take special care of your orders. Or send for our SPECIAL SERVICES DATA

$7.95 COMPLETE RACE CAR COMBINATION OUTFIT

NEW! Scientific's "HALF-pint" race car, complete with direct drive PLUS O.K.049 engine PLUS all needed accessories. Five minutes after you open the package, you can race this car on any smooth surface, even your own backyard or cellar. Speeds over 40 miles per hour. COMPLETE except for fuel and battery. Car alone $2.95.

How To Order Send remittance in full (we prepay packing and insurance) or send $1 and we ship collect C.O.D. same day for balance. Address your order to us at your nearest branch office.

- Dept. TC-52, 156 West 22nd St., New York 11, New York
- Dept. TC-52, 1065 Broadway, Brooklyn 21, N. Y.
- Dept. TC-52, 55 E. Washington Street, Chicago 2, Illinois
- Dept. TC-52, Rm. 230, 742 Market St., San Francisco 2, California
- Dept. TC-52, Rm. 306, 427 Carondelet St., New Orleans, La.
- Dept. TC-52, Gas & Electric Bldg., Denver 2, Colorado

America's Hobby Center INC

OVER A GENERATION OF FAIR DEALING GUARANTEES YOUR SATISFACTION

NOW

Embry-Riddle

IS THE TIME

TO TAKE THE STEPS THAT WILL GIVE *YOU* LIFETIME SECURITY IN AVIATION!

RIGHT NOW...*TODAY*...OPPORTUNITIES FOR TRAINED AVIATION SPECIALISTS ARE "GOING BEGGING"! ONE YEAR FROM TODAY, THE DEMAND FOR CAREER MEN IN THE AVIATION INDUSTRY WILL BE *EVEN GREATER!*

Embry-Riddle can offer you *definite proof* of the above statement...or, to prove it to yourself, just read the "Help Wanted" columns of any of the big city newspapers!

This Is Your Opportunity...and Now Is The Time To Prepare For It! Embry-Riddle training is by far your quickest, surest road to the opportunities in the rapidly-growing aviation industry. Complete eight-mo. to two-year Embry-Riddle courses in every phase of aeronautics will fit you for a *big paying* job with a future! You learn fast and well at Embry-Riddle. You work with live aircraft and the finest equipment in vast shops and hangars...with the finest instructors. If you are now a high school student or a recent graduate, investigate at once the full advantages and guaranteed career security of Embry-Riddle training. If military service interrupts your studies...you're still a long way ahead of the crowd. Don't delay...write for complete information today.

Eligible Vets Still Accepted Under G. I. Bill of Rights! *Classes are beginning now...Send this coupon today! These complete eight-mo. to two-year Embry-Riddle courses are tailored to the pressing demands of the aviation industry!*

Aircraft & Engine Mechanics Vast numbers of *properly* trained A&E Mechanics are urgently needed. Our C.A.A. approved school assures quickest advancement. Embry-Riddle students learn fast with modern equipment, including jet...live aircraft, airline-size hangars.

Aeronautical Design and Technology Embry-Riddle's accelerated 26-mo. Aeronautical Design and Technology Course provides finest training available. Technicians with management responsibility enjoy highest salaries!

Commercial Pilot Embry-Riddle trained pilots benefit from our years of experience with 30,000 students...the best instructors, up-to-date aircraft, superb year-'round flying weather. Also Instrument and Instructor's ratings.

A&E Combined with Commercial Pilot Airmen with *dual* pilot-engineering ability are needed by aviation companies and operators. Embry-Riddle *combination* training offers you the most in your aviation career.

Embry-Riddle
International
SCHOOL OF AVIATION
MIAMI 30, FLORIDA

Dean of Enrollments' - Dept. 97
Embry-Riddle School of Aviation
Miami 30, Florida

Please Print

NAME _____

ADDRESS _____

City _____

State _____ Age ____

I am interested in...

- ☐ A.&E. Mechanic
- ☐ Commercial Pilot
- ☐ Aeronautical Design and Technology
- ☐ A.&E. Combined with Commercial Pilot
- ☐ A & E Combined with Private Pilot

Check One ☐ Veteran ☐ Non-Veteran

TRAIN IN MIAMI--AIR CAPITAL OF THE WORLD

air notes | AVIATION TODAY AND TOMORROW

AIR FORCE'S new planes soon to come off production lines are F-100, larger and faster version of F-86; F-101, improved version of McDonnell F-88; F-102, based on Convair XF-92 delta wing (see photo); and possibly version of Navy twin jet attack bomber Douglas A3D to be designated as RB-66. . . . DOUGLAS F3D-2 Skynight flew from Los Angeles to Patuxent, Md., in 4 hours 55 minutes.

●

CHASING GIRLS for 116 missions is the pleasant task of the hurricane-hunting 54th Reconnaissance Squadron stationed at Guam. The "gals" are tropical hurricanes given such names as Georgia, Hope, and Iris by the Air Force. . . . PIPER TWIN-STINSON, new economical twin-engine executive plane to be produced by Piper Aircraft Corp. . . . NATIONAL SOARING CONTEST in Dallas, Tex., from August 19 to August 30. . . . SABENA, Belgian airline, ordered two more Douglas DC-6Bs, bringing total to eight. . . . "Flying Businessman of the Year," title awarded annually to Navion owner having flown most hours, went to S. D. Murphy of Indianapolis.

●

AIRPORT runways and taxi strips formerly softened by jet fuel spillage now protected with coating of plasticized synthetic rubber and tar blend developed by U.S. Rubber. . . . LOCKHEED and Douglas have ordered $31 million of Turbo-Compound engines from Wright Aeronautical Corp. to power Super-Constellation and DC-7 planes. . . . COL. HARRY K. COFFEY, of Portland, Ore., elected president of the National Aeronautic Association. . . . PAN AMERICAN World Airways Strato-Clipper transport flew from New York to Paris in 10 hours, 21 minutes, establishing unofficial record for trans-atlantic crossing.

●

SPIN TESTS conducted on Northrop F-89 Scorpion demonstrated excellent stability characteristics of craft. Plane must be deliberately spun and held in spin with controls; recovery is immediate. . . . TWA Senior Captain Al Heath made 300th trans-Atlantic crossing last February. . . . RAF Squadrons flying Canberra bombers are probably highest in world—their operational altitude is 9 miles.

ATOM BOMB progress since 1945 has reduced size of missile so that it now can be carried by fighter planes. The new, small bomb is nonetheless potent, comparable in destructiveness to the one dropped at Hiroshima. A number of jet fighters are having bomb racks converted to carry the bomb.

●

U.S. AIR TRAVEL mileage exceeded Pullman travel mileage last year for the first time on record. . . . BRITTANIA, England's new turbo-prop airliner now under construction, to carry 90 to 104 passengers at tourist or coach fares; speed will be 370 mph. . . . STANLEY HILLER, JR., of Hiller Helicopters chosen as one of America's ten outstanding men by U.S. Junior Chamber of Commerce. . . . CONVAIR has completed modification of B-36A's and B's to B-36D. Next model will be the "F" powered by 3800 hp piston engines instead of the D's 3500 hp. . . .AERO-CAR of Longview, Wash., building four of their roadable planes. . . . ONE-MAN RADAR aid for guiding planes into a landing at small airfields developed in England.

●

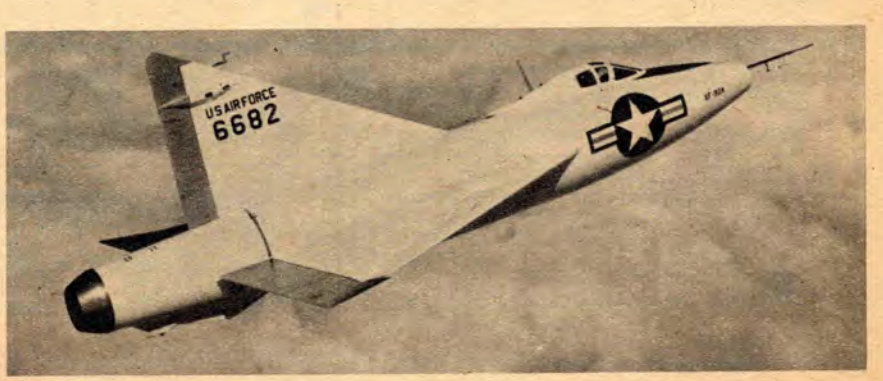
DE HAVILLAND COMET jetliner granted Certificate of Airworthiness by British Air Ministry. First Comet to operate on passenger run already delivered to British Overseas Airways, eight more to follow. . . . FRENCH aircraft concern Aero-Sud-Est to build Sikorsky S-55 10-place helicopter under license.

●

PIASECKI Helicopter Corp. in production on the HUP-2 Navy helicopter; craft differs from earlier HUP-1 model by absence of twin vertical fins, depending on automatic pilot for stability.

●

HERE IS first photo of Delta wing Convair XF-92A with afterburner contained in the extended tail section, which adds substantially to the thrust of the plane's J-33-A-29 engine. The XF-92A, which made its first flight September 18, 1948, is now completing an Air Force evaluation program and is scheduled for delivery to the National Advisory Committee for Aeronautics for further research. It was built as an experimental ship to explore and test flight characteristics of a true delta wing.



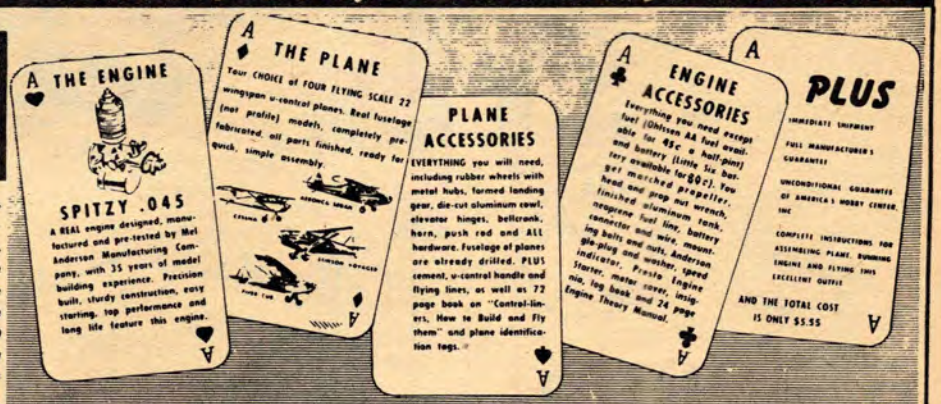
YOU WON'T GET OTHER BARGAINS LIKE THESE!

NO ONE CAN BEAT 5 ACES!

$5.55 FOR THIS COMPLETE OUTFIT

America's Hobby Center, Inc. ALWAYS has a winning hand because it has your interests at heart. When we make an offer, it's always a bargain, not only because it's top-notch merchandise, but because we go all-out to save you money AND give you special value. Here's almost $10.00 of regular advertised merchandise, fully guaranteed, and selected by our experts as a matched unit, for

only $5.55 With O.K. CUB .039 $5.95


A THE ENGINE
SPITZY .045
A REAL engine designed, manufactured and pre-tested by Mel Anderson Manufacturing Company, with 35 years of model building experience. Precision built, sturdy construction, easy starting, top performance and long life feature this engine.
A THE PLANE
Your CHOICE of FOUR FLYING SCALE 22 wingspan u-control planes. Real fuselage (not profile) models, completely pre-fabricated, all parts finished, ready for quick, simple assembly.
PLANE ACCESSORIES
EVERYTHING you will need, including rubber wheels with metal hubs, formed landing gear, die-cut aluminum cowl, elevator hinges, bellcrank, horn, push rod and ALL hardware. Fuselage of planes are already drilled. PLUS cement, u-control handle and flying lines, as well as 72 page book on "Control-liners, How to Build and Fly them" and plane identification tags.
ENGINE ACCESSORIES
Everything you need except fuel (Ohlsson AA fuel available for 45¢ a half-pint) and battery (Little Six battery available for 90¢). You get matched propeller, head and prop nut wrench, finished aluminum tank, neoprene fuel line, battery connector and wire, mounting bolts and nuts, Anderson glo-plug and washer, speed indicator, Presto Engine Starter, motor cover, insignia, log book and 24 page Engine Theory Manual.
PLUS
IMMEDIATE SHIPMENT
FULL MANUFACTURER'S GUARANTEE
UNCONDITIONAL GUARANTEE OF AMERICA'S HOBBY CENTER, INC.
COMPLETE INSTRUCTIONS FOR ASSEMBLING PLANE, RUNNING ENGINE AND FLYING THIS EXCELLENT OUTFIT
AND THE TOTAL COST IS ONLY $5.55

THE WHOLE WORKS FOR ONLY $5.55

A.H.C. A DELUXE BARGAIN COMBO

ROYAL SPITFIRE .065
Most Powerful ½A engine

PLUS Your choice of **CURTISS P40F or SPITFIRE**

Monarch Models 20" wingspan 'Spittin' Image' control-line models. Extra deluxe kits. PERFECTLY and COMPLETELY PREFABRICATED. Beautiful models you will be proud to fly — and a cinch to build in only one evening.

PLUS EVERY accessory to build and fly except dope, fuel and battery. INCLUDED are matched propeller, tank and fuel line, glo plug, connecting clip and wire, wrench, motor mounts, mounting bolts and nuts, flying wire and reel, control handle, motor cover, identification tags, Presto engine starter, all hardware, bellcrank, elevator horn, hinges, sandpaper, cement, rubber wheels, decals, lead-out and pushrod wire, formed landing gear engine instructions, full-size plane plans and instructions, log book, speed indicator, PLUS Glo Engine Handbook, giant book on Control-liners, PLUS membership in Modelcrafters of American, postage, packing, insurance and 128 page 2-color hobby catalog.

BEAT THIS PRICE IF YOU CAN — A $15.00 VALUE — FOR ONLY $9.95

ENGINE TRADE-IN SERVICE

While America's Hobby Center, Inc. does not sell used engines, we have a constant request from schools, clubs and overseas soldiers for second-hand engines for experimental work.

If you have a used engine, we will be glad to accept it in trade for any merchandise (motors, planes, boats, accessories, etc.) except Flying Outfits and a few other exceptions, listed in our ads or catalog. Just send in your engine (with your name and address) as the following schedule indicates:

Your old Engine PLUS

$3.75 =	$5.00
7.50 =	10.00
11.25 =	15.00
15.00 =	20.00
22.50 =	30.00

Credits towards your Purchase

You will receive the usual free premiums, subscriptions, etc.

EVERYTHING in this magazine can be ordered from A.H.C.

N. Y. CITY MODELERS
TWO STORES TO SERVE YOU!
Largest stock in the country at either of our two stores
156 W. 22nd St., New York City
1065 Broadway, Brooklyn, N. Y.
Experts on hand to help you with your problems
Complete stock including engine parts and service at both stores

1. One year subscription to Model Airplane News, Air Trails and Flying Models or its equivalent value to our regular customers.
2. 14-Day Money Back guarantee on unused purchases.
3. Unused purchases exchangeable within 14 days.
4. No postage or packing charges — we insure safe delivery anywhere in the world.
5. 24 Hour service. Mail addresses in Chicago, Denver, New Orleans and San Francisco, which will airmail your orders to our N. Y. office for prompt shipment.
6. Most complete model stock in America—gas, rubber, solid, etc., etc. If it's advertised, we can usually supply it.
7. Competent understanding of your modeling problems.
8. No "minimum" orders. Any order is welcome.
9. FREE with gas motors, 50 ITEMS WORTH OVER $7.00 AT NO EXTRA COST.
10. FREE rubber wheels, knife, etc., etc., with every gas plane selling for over $1.50. 12 ITEMS WORTH $3.50 AT NO EXTRA COST.
11. FREE membership in "Modelcrafters of America," the club that keeps you up to date on gas modeling and SAVES YOU MONEY ON YOUR PURCHASES.
12. FREE illustrated giant 2-color 128 page catalog with every order.

AHC does!!

HOW TO ORDER

Send remittance in full (we prepay packing and insure) or send $1 and we ship collect C.O.D. same day for balance. Address your order to us at your nearest branch office.

America's Hobby Center INC.

Please RUSH me the following: DEPT. TC-52
PLEASE PRINT

156 West 22nd St., New York 11, New York
1065 Broadway, Brooklyn 21, N. Y.
55 E. Washington Street, Chicago 2, Illinois
Rm. 230, 742 Market St., San Francisco 2, California
Rm. 306, 427 Carondelet St., New Orleans, La.
Gas & Electric Bldg., Denver 2, Colorado

Name.....

Street Address..... Amount Enclosed.....

City..... Zone..... State.....

Page	Quantity	Name & Description of Items	Cost Each	Total
	ONE ONE ONE	ENGINE TROUBLE TRACER & AID MANUAL SPEED INDICATOR CHARTS FLIGHT LOG BOOK	FREE with each order	
			Total	

24 HOUR SERVICE AT ALL TIMES

Only 25¢ each

Handy WORKBENCH EDITIONS of these famous Winston books (regularly $1.00 each) for only 25 cents each:

GLO ENGINE HANDBOOK. Tells all about the theory and operation of glo engines ☐

CONTROL LINERS. How to build and fly them. Covers the subject from A to Z ☐

GAS MODEL PLANE CONSTRUCTION. The answers to every problem you will ever meet ☐

Opportunities

UNLIMITED

MEN 18 TO 25

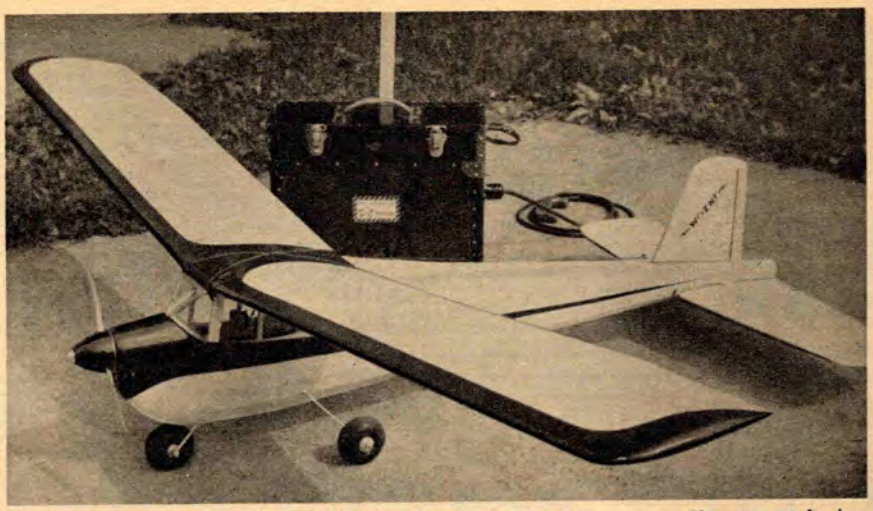
When you graduate from the Dallas Aviation School into the field of aircraft and engine maintenance your opportunities will continue to grow. Prepare for the kind of a job you want in a world-wide expanding industry. Qualified men in aviation are needed in both Civilian and Military life.

The Dallas Aviation School, located at Love Field in Dallas, the heart of expanding air activities . . has trained successful, skilled, aviation personnel since 1926. Licensed CAA instructors give specialized training from the smallest detail to the latest information about new engine development.

Send today for information that can take you on the most important trip of your life . . . illustrated booklet will be forwarded without obligation.

REGISTRAR, DALLAS AVIATION SCHOOL, LOVE FIELD, DALLAS, TEXAS, Dept. AT951
Please send me your new 1952 catalog and complete information about enrollment.
Name_____ Age____
Address_____
☐ Veteran ☐ Non-Veteran
City_____ State____
(Please print all information)

Dallas Aviation School
an affiliate of Aviation Activities Co.
Love Field, Dallas, Texas



Sleek R/C job was cooperative club project by Clear Lake, Iowa, gang. She spans 6 ft., has Aerotrol equipment, is powered by an O&R 33. Club project ideal for start in R/C.

R/C

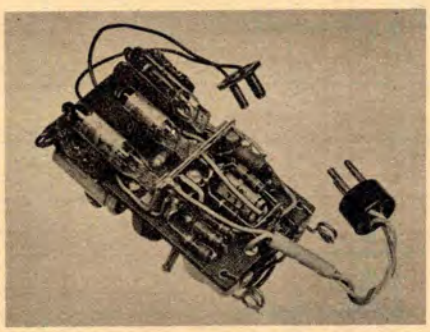
Around the modelplane radio-control circuit . . . comment and reports by a leading authority

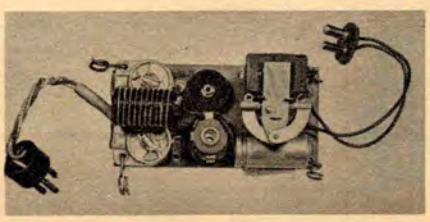
■ The F.C.C. on March 24th opened up an R/C spot at 27.255 mc.—note that this is not a "band," it is a spot frequency, though they allow plus or minus .04% (or about 10 kc) deviation to cover crystal drift or tone modulation. This is not a "free band"—you still need a license for it. You apply for the license on form 505, the same one used for the 465 mc. Citizens Band.

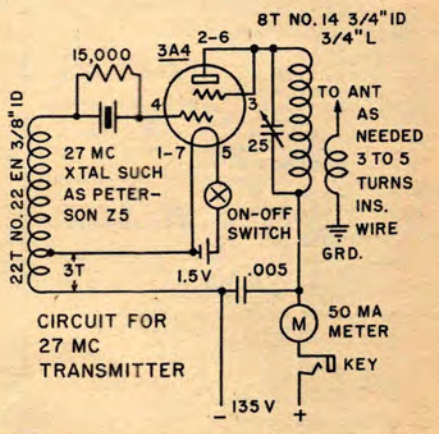
The new spot is another part of the "Citizens Radio Service," except our R/C transmitters, if crystal controlled, require no F.C.C. approval. Also, you don't have to take an operator's examination or even to have an operator's license. Get form 505 from the nearest F.C.C. office (they are in most large cities); there is no cost for this license. But *get* one—it is just as serious to be caught operating without a license on 27.255 as it is to have the Inspector catch up with you working on the ham bands without the proper licenses. The F.C.C. will still be at contests checking this; be prepared, and you greet the F.C.C. man with a pleasant smile.

As we have stated before, crystal control is required,' and the maximum input to the tube connected to the antenna is 5 watts. It's up to you to make sure that your signal is really within the limits stated above. Best have the set checked by someone with a reliable frequency meter before you start flying with it. Crystal controlled sets *can* be off frequency!

The picture of the neat monoplane shown here brings out an idea which might be of interest to many clubs that are hesitating on taking the plunge into R/C. It was sent in by Jack Ulstad of Clear Lake, Iowa, and was a cooperative project financed and built by many members of the local model club. He indicates that the project was a great success. The ship has a (*Continued on page 79*)







Miniaturized version of 3-tube receiver by James Jensen. Weight is but 4 oz. Jensen appears to have put cement on coil turns to keep them from shifting. Adhesive tape normally holds tubes in place—removed for photo. See copy for info on schematic.

GUILLOW'S Easy to build SHELF MODEL KITS

24 MODELS OF FAMOUS *JETS*- HELICOPTERS - BOMBERS - WORLD WAR 2 FIGHTERS

THE DIE-CUT PARTS GO TOGETHER LIKE MAGIC!

With Guillow's die-cut solids, you don't have to spend long hours carving blocks to shape — just assemble the accurate die-cut parts in a jiffy and round up the edges with a knife or sandpaper.

OTHER FAMOUS MODELS AVAILABLE IN THIS SERIES

Douglas AD-1 Skyraider	No. Am. T-28 Trainer	Lockheed C-69 Constellation
No. Am. P-51 Mustang	Convair B-36 Bomber	Boeing B-29 Superfortress
Vought F4U-1 Corsair	Fairchild C-119 Packet	Curtiss P-40 Warhawk
Republic P-47 Thunderbolt	Lockheed P-38 Lightning	Sikorsky H-5 • Transport

PREFABRICATED KITS — NO DIFFICULT CARVING

SPECIAL *Value* IN EACH KIT!
PLASTIC CANOPY OR PROP DISKS
WING AND FUSELAGE INSIGNIA

ONLY 25¢ EACH

1950 - 1951 NATIONAL STUNT CHAMPION

BARNSTORMER

America's leading stunt plane

Once again designer Lou Andrews and "Buzz" Ferguson win top honors at the Nationals, thus repeating their outstanding triumph of 1950. Under a broiling Texas sun, the Barnstormer successfully withstood the stern challenge of some of America's top stunt flyers and proved itself a real national champion. To win a national stunt title once is a notable feat — to score again is the mark of a thoroughbred. Now you can be sure when you fly a Barnstormer, you fly the best!

designed by Lou Andrews — 1950 NATIONAL OPEN STUNT CHAMPION, 1948 INTERNATIONAL OPEN STUNT CHAMPION

ALL PARTS COMPLETELY PRE-FABRICATED

LICENSED UNDER JIM WALKER U-CONTROL, UNITED STATES PATENT NO. 2,292,416

$5.95

SPECIFICATIONS

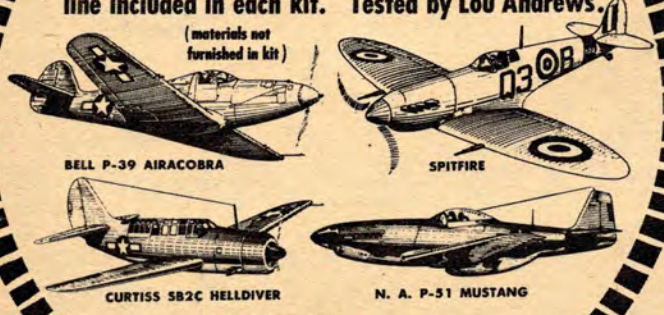
Wing Span	47 in.	Weight	approx. 26 oz.
Wing area	470 sq. in.	Speed	60 to 75 M.P.H.
Length	30⅞ in.	Engine	.23 to .35 disp.

First in '50 . . . now first in '51

NEW!
SENSATIONAL!

Now -- instructions for converting these four GUILLOW $1.00 FLYING MODELS to ½A control line included in each kit. Tested by Lou Andrews.

(materials not furnished in kit)



24" wing span tissue covered models — die cut balsa parts, shaped nose blocks, and plastic props for rubber powered flights.

$1.00 ea.

PILOT'S CHOICE

A JUNIOR VERSION OF THE STUNT CHAMPION BARNSTORMER

CLASS 1/2A *Baby* BARNSTORMER

SPECIFICATIONS

Wing Span . . . . . 23½ in.
Wing Area . . . . . 118 sq. in.
Length . . . . . 15⅝ in.
Weight . . . . approx. 4½ oz.
Engine . . . .035 to .049 disp.

$2.95

The ideal stunt ship for ½A enthusiasts. Designed and tested by Lou Andrews, the "Baby" will do all the stunt patterns in the book — a real feat for a ship of this size.

TOPS IN QUALITY
TOPS IN PRE-FABRICATION

NOW - BUY YOUR **Trixter** CONTROL LINE GAS MODEL

Boys! SEE YOUR LOCAL DEALER FOR GUILLOW KITS - IF NOT AVAILABLE, SEND DIRECT TO FACTORY. ADDING 15¢ TO ALL MAIL ORDERS

PAUL K. GUILLOW, WAKEFIELD, MASS.

At every airport in America, you'll see young men standing outside the fences, watching the planes come and go; watching the busy hum of the activity of servicing and repair. Are you one who only watches when you could be an important part of these activities?

SPARTAN trains you quickly and thoroughly to become an important part of this most rapidly developing and expanding of all industries. Don't let the thought of possible Service to your country stop you from getting the training you need, right now! You will advance faster, in the Service, with this training and when you are out you will have both Service and SPARTAN training to help you to build a successful career. In addition you will have at least two years seniority with your company over those who start training after leaving the Service. *Get ahead faster with Spartan training.*

No Correspondence Courses

SPARTAN
A UNIVERSITY OF AVIATION

SCHOOL of AERONAUTICS — COLLEGE of ENGINEERING
MAXWELL W. BALFOUR, DIRECTOR — ADDRESS DEPT. AT-52

TULSA, OKLAHOMA

MARK AND MAIL NOW

Maxwell W. Balfour, Director
Spartan School of Aeronautics Dept. AT-52
Tulsa, Oklahoma
Please send your free Catalog immediately.

Name_____ Age____
Address_____
City_____ State____

Indicate which of these branches interests you.
☐ Flight ☐ Instruments
☐ Mechanics ☐ Aeronautical Engineering
☐ Radio ☐ Airline Maintenance Engineering
☐ Meteorology ☐ Flight Engineer

Spartan is approved for training under the G. I. Bill of Rights

The Civil Air Patrol Cadet

Want to Be a Reporter for Air Trails? By agreement with CAP National Headquarters, each State and Territorial Wing of Civil Air Patrol is invited to appoint one Cadet to supply news of the Cadet program, each month.

The best of this material will be printed here and the best of what we use will be credited to the Cadets who send it. Such material should be mailed to arrive before the 10th of each month at the following address:

Magazine Section
National Headquarters, CAP
Bolling AFB, Washington 20, D. C.

Mark the copy for *Air Trails*. Cadets in Squadrons within the Wing, do not send directly to this address; mail your copy to the Wing Cadet reporter in time for him to forward to Headquarters before the 10th of the month.

It is good for your organization to share information with units throughout the country and to display the record of a job well done among young people who may join. See that someone is active and alert in getting news from your Squadron.

An Expanded Camp Program has been arranged for this summer by a meeting between National CAP officers and representatives of the major commands of the Air Force. All but two commands will participate.

Camps will be at a total of 45 bases for 8,300 Cadets and 725 Senior members as compared with 33 bases, 4,200 Cadets, and 420 adults last year.

All but two of the camps will admit girls as well as boys and CAP women will be included among the supervisors.

It is planned also to place interested Reserve Officers on two weeks' duty at the encampments. A total of 80 hours of instruction in aviation and military subjects, including some flight, will be given each Cadet.

The enlarged program will permit many Cadets—even newcomers in some cases—to get the chance they otherwise would have missed. Join your nearest CAP Cadet unit now, or take the initiative in forming one.

Cadet Self-Government is encouraged by the new regulations which permit a Cadet unit to be formed with as few as three adult supervisors, rather than only where there is a Senior Squadron as was the rule before.

Patterned after a Regular Air Force unit, a Cadet Squadron has its Commanding Officer and its staff to supervise each necessary function such as training, record keeping, and supply.

Air Force Placement is the goal of the CAP Cadet programs for those who want to make a career of the service as well as for those who would prefer civilian life but would choose the Air Force if called.

When Congress approves the Air Academy, to take its place with Annapolis and West Point as the school for officers, it is hoped that outstanding CAP Cadets will receive special consideration on the candidate list.

For flying cadet training, a recent shift in Air Force policy points also to the value of home-town flight training prior to service. In recent years, trainees have been placed directly in heavy trainers of the T-6 type without previous flight in light aircraft.

Now an evaluation test is being made to show how lightplane experience can be used to screen aviation cadet applicants—determine their ability. The more flight time a cadet can get in his formative years, the more likely he will be to pass his screening test and make good as a pilot.

CAP Maneuvers are offering many CAP Cadets the chance to fly as passengers on practical cross-country sorties rather than just around the airport. As in the last war, exercise of the aircraft warning network is one job that lightplanes can do. They are flown over pre-determined paths to see whether the spotters correctly report them.

One of the most ambitious search maneuvers ever flown was recently staged by the Pennsylvania Wing in cooperation with the Air Force. Planes from Westover AFB, Massachusetts, dropped 3 para-medics at points in the wooded sections of the state.

CAP's job was to find these doctors and get them out of the woods safely. No less than 300 planes and three squadrons of motorcycle rangers were out that week-end. The rangers are able to take their radio-equipped cycles through rough country. Cadets had plenty to do in the communications, food supply, and many other phases of this exercise.

Several actual searches have been flown in the past few months. One major effort was along the Atlantic Coast to look for a private plane believed to have crashed at sea. This was reminiscent of the wartime antisubmarine coastal patrol for which CAP will be ready again if needed.

Educators met recently in CAP Hdqrs. to discuss improvements in training material for the Cadet program. CAP has been able to get the aid of some of the best-known air age educators in the country under the chairmanship of Dr. Robert I. Stearne, president of the University of Colorado where CAP's summer workship will be held for teachers from all regions.

A CAPC Paper is published by the Camden, N. J., Squadron. Entitled "Wings over Camden," this news sheet is written, mimeographed, and distributed entirely by CAP cadets.

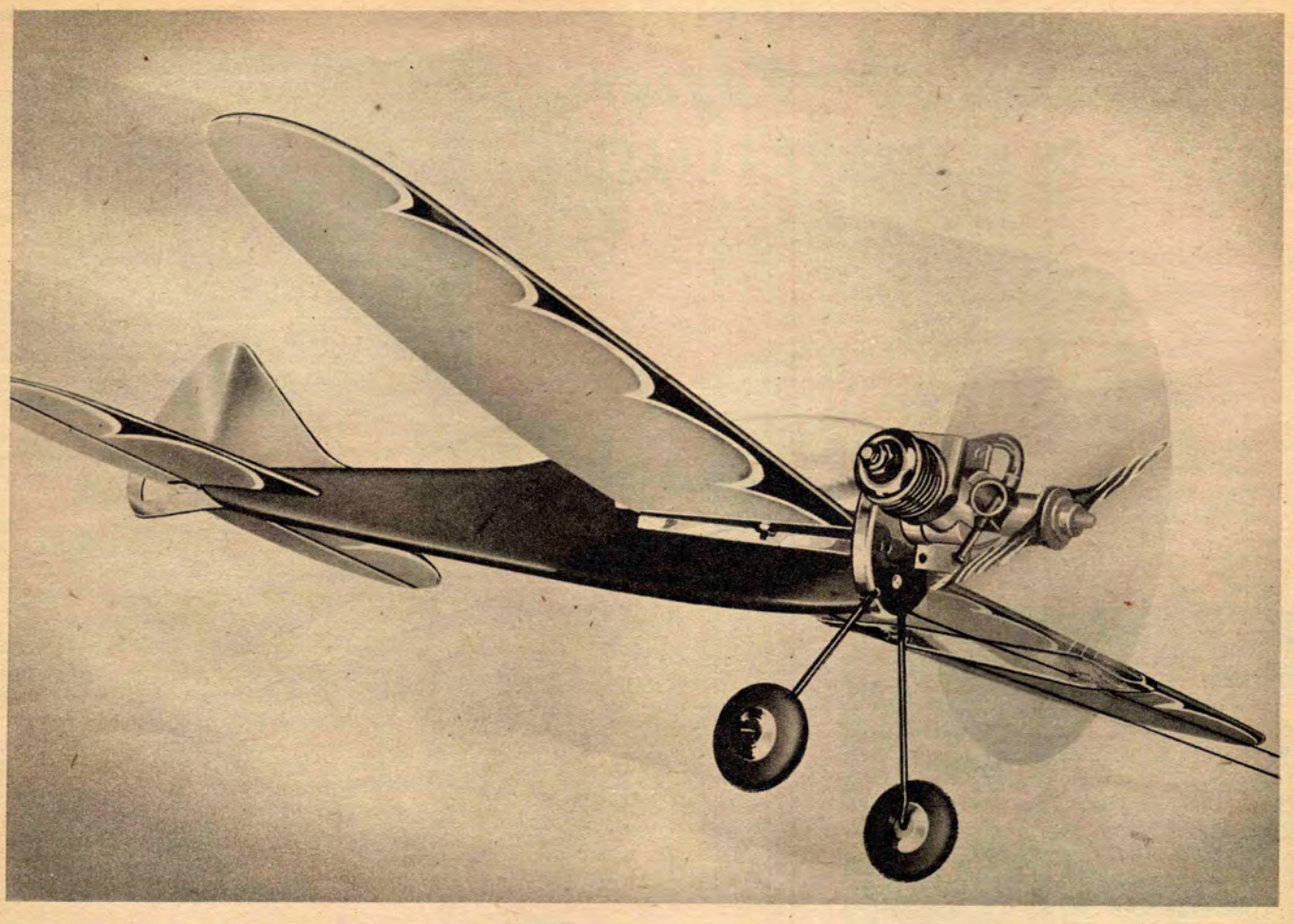
Join the Civil Air Patrol—the civilian auxiliary of the U. S. Air Force. Cadets are 14½ to 17; Senior members 18 and over.

C. A. P. NEWS c/o Air Trails
304 East 45th St., New York 17, N.Y.

I'm interested in more information on the CAP and would like to hear from my nearest unit.

Name.....
Address.....
City (and Zone).....
State.....Your Age.....

Air Trails, May '52



Jim Walker Announces the A-J FIREBABY with Supercharged "Royal Spitfire" Engine

It's just what you've been wanting...a proven airplane with a "hot" motor...instant starting...smooth performance... wide speed range and tremendous power response.

We modified the Royal Spitfire engine to give supercharged performance and put it on the Firebaby. The result is sensational...and so is the price! Just see what you get:

A-J Firebaby alone	**$2.50**
"Royal Spitfire" Engine	**$7.95**
Total Value	**$10.45**

Get Both Complete

$8.95

Jim Walker **A-J AIRCRAFT CO.**

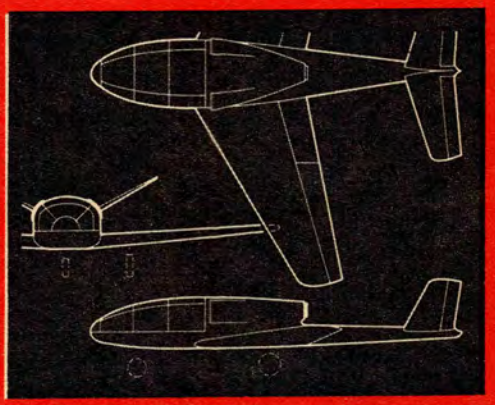
1166 N. E. 31ST AVE. • PORTLAND 12, ORE.

Jim Walker

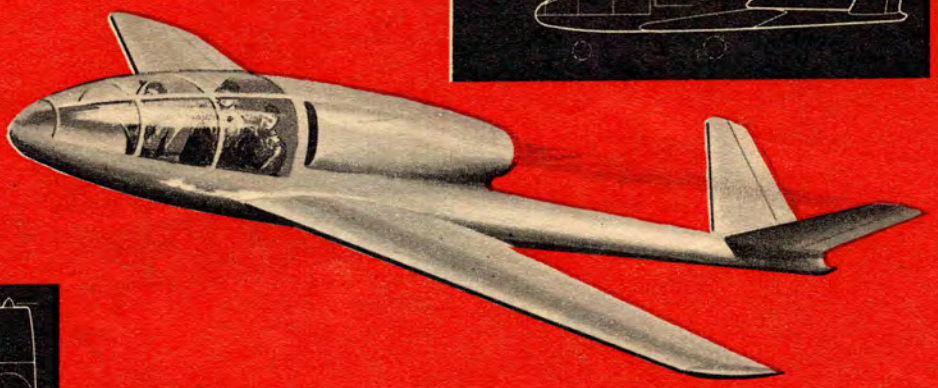
FIREBABY

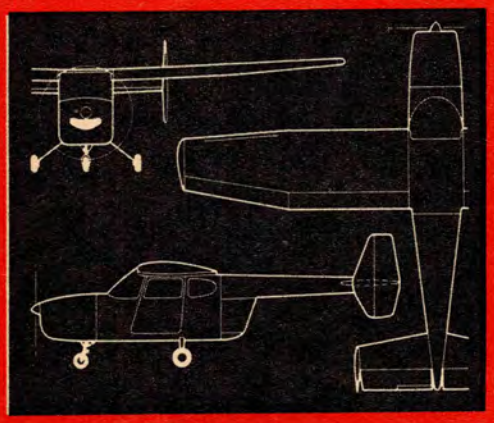
Buy it ready to fly, complete with flying lines and full instructions for flying and stunting. Wing span 19 in.; weight with motor 3 oz. All parts are finished, painted and fuel-proofed. Just slip them together, bolt on wing and motor, "gas up" and you're ready to take off!

Airmen of Vision
DESIGN COMPETITION

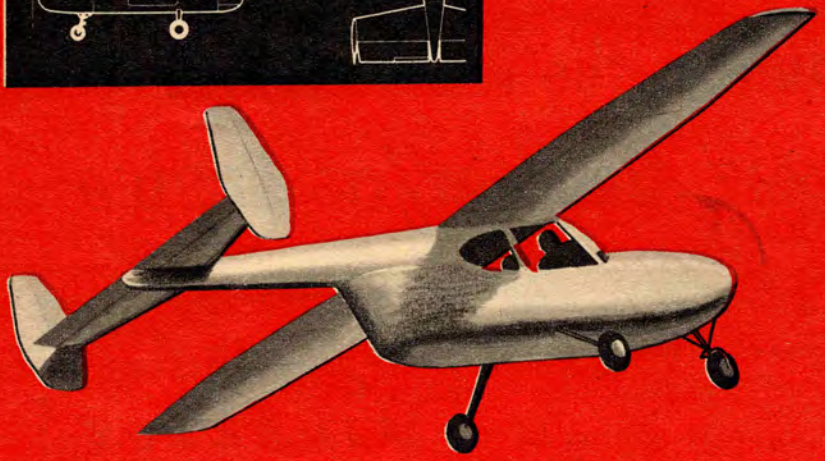


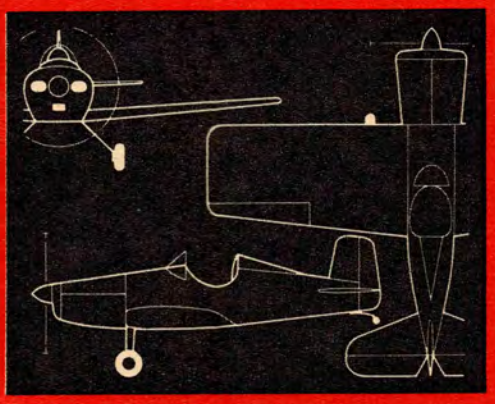
This month's honors go to Leonard Wood of Somerset, Mass. age 13, who sends in his design for a jet-powered lightplane. It is a very nice straightforward little craft that ought to be just the ticket for one of these Continental Turbomeca jet plants to be produced soon in this country. With about a 600 lb. thrust engine it should hit 250 mph.





Aage Roed of Detroit, Mich. calls his plane the Flying Station Wagon. It has been designed for general utility, to serve as pleasure craft, light cargo and ambulance. Plane bears marked resemblance to the British Auster B-4. Wingspan is 35 ft., length 24 ft. 10 in. It is powered by a 165 hp engine. Top speed is 135 mph.





Single-place ultra-light plane by K. A. Stockbarger of Healdsburg, Calif. Designer claims plane could be produced cheaply in package form minus engine as the construction is of wood and fabric. This type of craft is very popular in Europe, offering sportsman pilots an inexpensive way to fly. Stockbarger's ultra-light has a span of 18 ft., weighs 720 lbs., is powered by a 65 hp engine and is capable of a speed of 130 mph.

Air Trails has opened its columns to those who are interested in presenting plans for "aircraft of the future." Rules governing the competition are as follows: Three-view sketches of the proposed aircraft will be required. These should be not less than 8½ x 11 inches for the entire three-views. Give sketches of the complete airplane in three-quarter front and rear positions. Photos of a model of proposed design may be included. Information of power plant(s), estimated performance, dimensions, and explanations of any unusual features are required. Data as to age, occupation or schooling of the entrant will be welcomed by the editors and judges. The designs may be of any type: commercial aircraft, military planes (fighters, bombers, troop transports), planes for the private flyer and single-engine sporting or racing craft. The entry each month judged the most practical or of the greatest significance will receive an award of $25. Payments of $5 will go to the runners-up. Entries will not be returned and for that reason those participating should keep copies of all material submitted. Mail entries to Airmen of Vision, c/o Air Trails, 304 E. 45th St., New York 17, N. Y. Editors regret that because of large number of entries they cannot enter into correspondence on A. of V.

Trained Technicians...

ARE CLEARED TO COME IN!

Special skills expertly maintain the global operations of our expanding United States Air Force. It is special skills of trained craftsmen, behind the flying skills, that keep our modern air power aloft to defend our nation.

Men with training as former specialists in any Service . . . or non-veterans with special technical talents . . . are needed *now* to support our ever-growing air might. Radio, radar and other communications specialists, weather, armament, automotive maintenance, medical technicians and many technical skills are urgently needed . . . now . . . today!

For your specialized "know-how," your Air Force offers greater opportunities for advancement, security and a rewarding sense of an important job well done.

Here, briefly is the story: If qualified, you can enter the Air Force in an attractive grade, according to your present ability. The Air Force will tell you exactly what your initial rank and pay grade will be before you join-up. Veterans, if qualified, enter in their old grade or better and will skip basic training and be assigned initially to a nearby Air Force Base.

For the rest of the story in detail, consult your local U. S. Army-U. S. Air Force Recruiting Station immediately, or *mail coupon today!*

MAIL COUPON TODAY *for Full Information*

U.S. AIR FORCE

AIRMAN PROCUREMENT
Headquarters, U. S. Air Force
Washington 25, D. C.

Please send me details about U.S. Air Force specialists.

*NAME*_____

*ADDRESS*_____

*CITY*_____ *ZONE*_____ *STATE*_____

*SPECIALTY*_____

See Yourself in this Picture!

TRAIN FOR AVIATION AT *Northrop*

Join the hundreds of career-minded high school graduates now training at Northrop Aeronautical Institute. Qualify yourself for an important, high-paying job in the vital, essential aviation industry!

WHY ALERT, AIR-MINDED MEN CHOOSE NORTHROP TRAINING

1. As a Northrop graduate, you share the prestige of the famous Northrop name—a passport to opportunity and success throughout the aviation world.
2. At Northrop your training is thorough, practical, complete. You work with advanced training equipment—live jet engines, wind tunnel, scientific test equipment, single and multi-engine aircraft.
3. Northrop training prepares you for *essential work;* after you enroll at Northrop Aeronautical Institute, the registrar will, at the proper time, notify Selective Service of your student status.
4. When you complete the Northrop Aeronautical Engineering course, you are educationally qualified for Air Force Cadet, Officer Candidate, or Naval Aviation Cadet.

YOU CAN QUALIFY FOR NORTHROP TRAINING...

1. If you have completed high school or the equivalent.
2. If you have mechanical or engineering aptitude.
3. If you can *invest a short time now* in essential training for a future, exciting aviation career.

INVESTIGATE NORTHROP AVIATION TRAINING TODAY!

Northrop Aeronautical Institute offers complete courses in AERONAUTICAL ENGINEERING and AIRCRAFT & ENGINE MECHANICS. Northrop Aeronautical Institute is an "Accredited Higher Institution". Also approved under G. I. Bill.

WRITE TODAY FOR *FREE* NORTHROP CATALOG. THERE IS NO OBLIGATION!

Northrop
Aeronautical Institute
1533 E. Broadway, Hawthorne
Los Angeles County, Calif.
Approved for Veterans

NORTHROP AERONAUTICAL INSTITUTE
1533 E. Broadway, Hawthorne, Los Angeles County, Calif.

Please send me immediately the Northrop catalog, special military information and employment data, and schedule of starting dates of classes. I am interested in:

☐ Aeronautical Engineering ★ Aircraft & Engine Mechanics ☐

Name_____ Age____

Address_____

City_____ Zone____ State____

☐ VETERANS—Check here if you are entitled to training benefits under the G. I. Bill

SNS

AIR ADVENTURERS CLUB

■ It would be a thrilling experience to meet you all personally, but as that is impossible, why not help us to do the next best thing—send us your picture. Any snapshot will do, and we'll try to use as many of them as we have room for, from time to time, in your Air Adventurers Club pages. We can't do this unless we have them on hand, so put your name and address on the back and send them in—but don't be impatient if they do not appear in the very next issue.

You know, club members and members-to-be, "impatience" is one of the reasons why we are the most progressive nation on the face of this globe. We've always been impatient with what we have and wanted something better, impatient to get things done in a hurry, and impatient with rules, regulations and directions.

That last bit of impatience is the one that bothers all you young Air Adventurers the most, having to comply with some other chap's rules and regulations—and directions. Impatience with rules and regulations is fine in small, or at times even medium-sized doses, but it's usually better thinned down a bit with what might be labeled "impatience with imperfection." In other words, you Air Adventurers should try to hold down your overactive impatience for the good of yourselves, especially in aviation.

A few weeks ago a member stopped by with a modelplane he had assembled from a kit. It wouldn't fly; in fact, it wouldn't even "R.O.G."! Jerry, a typical "eager beaver" about everything, is one of those impatient-to-get-it-done fellows, same as a lot of us.

"Just why won't it fly?" he asked. "I followed almost all the directions and did pretty nearly everything they said, but it won't even take off, let alone fly."

As you model-building A-A members know full well, kit assembly directions are prepared and written by the men who design the planes to fly. When you short-cut the instructions, hurry through them as fast as possible, and use substitute "just-as-good" materials, the finished kit is almost bound to be a groundlubber.

Jerry, in order to get things done quickly and the plane in the air, had taken a few liberties with those instructions. Among other things he had left out several braces and attached the struts in the wrong place so the wings had a negative angle of attack; he had used heavier paper instead of the tissue provided ("it kept tearing when I hurried"), had dropped and not bothered to find and use the washers to go between the nose plug and propeller hub. Was it any wonder the poor model couldn't get off the ground?

Learning right from the start to follow instructions or directions is one of the basic and important lessons of every airman.

Whether in aviation, school, or in a job, impatience with following the rules is dangerous, often wasteful, and in the long run may take more time and cause more trouble than curbing your impatience and staying on the beam.

Staying on that particularly loud and clear beam that gets your application for membership in the Air Adventurers Club to us and keeps you going through the various ranks and A-A aeronautical education program is as easy as it is important to you and your country's aviation future. The more really airminded and "air aware" young folks we have, the better our national security for the future will be.

The way to become an active member is easy and exciting. Just clip the A-A membership application coupon, fill it in completely and send it to us here at Air Trails. And don't forget to enclose that snapshot we mentioned earlier.

You'll be in good company right from the start, for your Air Adventurers Club numbers among its members some of the top airmen of the armed services as well as from the ranks of civilian airmen. We'll be glad to have you with us, as another proud wearer of the gold and blue wings of a true Air Adventurer.

AGE LIMITS: There are no minimum or maximum age limitations on Air Adventurers Club membership

MAIL TO: Air Adventurers, c/o Air Trails, 304 East 45th Street, New York 17, N. Y. Print all information required on the application; sign where indicated.

I hereby apply for membership in the Air Adventurers Club and promise to do everything in my power to uphold the principles of the organization and work for the advancement of American aviation. I enclose 25¢ in well wrapped coins for my credentials ☐; 50¢ for credentials *and pin* ☐—(indicate which).

.....
(Name—print)

.....
(Street address—print)

.....
(City—print) (Zone) (State)

....
(Age) (Sign here) (AT552)

Plymouth announces the 6th International Model Plane Contest

AUGUST 20 THROUGH 25—DETROIT, MICHIGAN

Bigger, better, more exciting than ever, the 1952 "Olympic games of model aviation"—the 6th International Model Plane Contest—will be staged by Plymouth Motor Corporation in Detroit, Mich., next August 20-25.

There will again be superb flying arrangements for free flight events, with plenty of room and every facility for retrieving planes. There will be excellent conditions, too, for speed, stunt, flying scale and carrier deck events. The annual banquet will again highlight the entertainment program.

The competition is divided into three different age groups: Freshman—8 years old, but not yet 12; Junior—12 to 15, but not yet 16; and Senior—16 to 20, but not yet 21. Ages are calculated as of July 1, 1952.

Here's a list of events and awards for 6th International

FRESHMAN

Outdoor Rubber (Unlimited)
Hand Launched Glider, Class A
Free Flight Gas, Class ½A
Control Line Speed, Class A
Control Line Stunt, Class ABCD

FRESHMAN AWARDS:

1st, 2nd and 3rd Places—Trophies
High Point—Trophy and $100 Bond
2nd High Point—Trophy and $50 Bond
3rd High Point—Trophy and $25 Bond

JUNIOR

Outdoor Rubber (Unlimited)
Free Flight Gas, Classes ½A, A, BC
Control Line Speed, Classes A, B, CD
Control Line Speed, Jet
Control Line Stunt, Class ABCD
Control Line Scale, Class ABCD
Control Line Team Racing, Class B
Navy Carrier Deck
Combat

JUNIOR AWARDS:

1st Place—Trophy and $100 Bond
2nd Place—Trophy and $50 Bond
3rd Place—Trophy and $25 Bond
High Point—Trophy

SENIOR

Outdoor Rubber (Unlimited)
Hand Launched Glider, Class A
Free Flight Gas, Classes ½A, A, BC
Control Line Speed, Classes A, B, CD
Control Line Speed, Jet
Control Line Stunt, Class ABCD
Control Line Scale, Class ABCD
Control Line Team Racing, Class B
Navy Carrier Deck
Combat

SENIOR AWARDS:

1st Place—Trophy and $100 Bond
2nd Place—Trophy and $50 Bond
3rd Place—Trophy and $25 Bond
High Point—Trophy

A Youth Activity Sponsored by **Plymouth**

MOTOR CORPORATION, DETROIT 31, MICHIGAN

• For complete details, rule books and entry blanks, see your nearby Plymouth dealer. Entries close July 27, 1952.

SOMETHING NEW

HAS BEEN ADDED TO

PAA Load Events!

Win a handsome BULOVA WATCH!

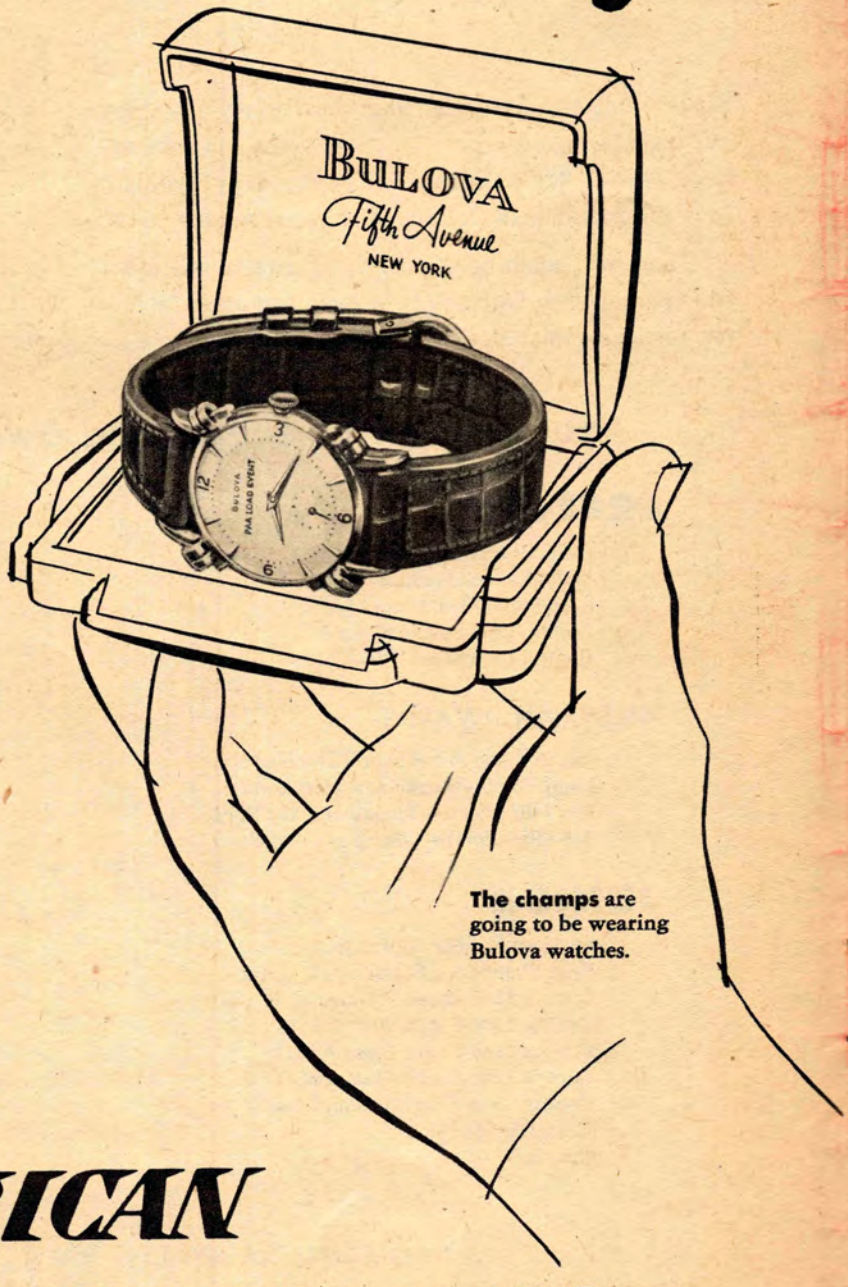
• Clippers* fly on Bulova time... and so can *you.* Now you can win a dependable Bulova watch—and cash prizes, too.

PAA Load Events have become an outstanding free flight competition at many local and regional meets—a highlight at the Nationals. They provide model flying that brings out the basic purpose of flying itself: *to carry a payload.* It's playing the game for "real."

For 1952 rules and specifications, write to: Educational Director, 28-19 Bridge Plaza North, Long Island City 1, New York.

1952 Nationals
PAA Load Event Awards
(All classifications)

1st . . . . . $100 and watch
2nd . . . . . $ 50 and watch
3rd, 4th, 5th Bulova watches



The champs are going to be wearing Bulova watches.

PAN AMERICAN

WORLD'S MOST EXPERIENCED AIRLINE

*Trade-Mark, Reg. U. S. Pat. Off.

Flight Beyond *Gravity*

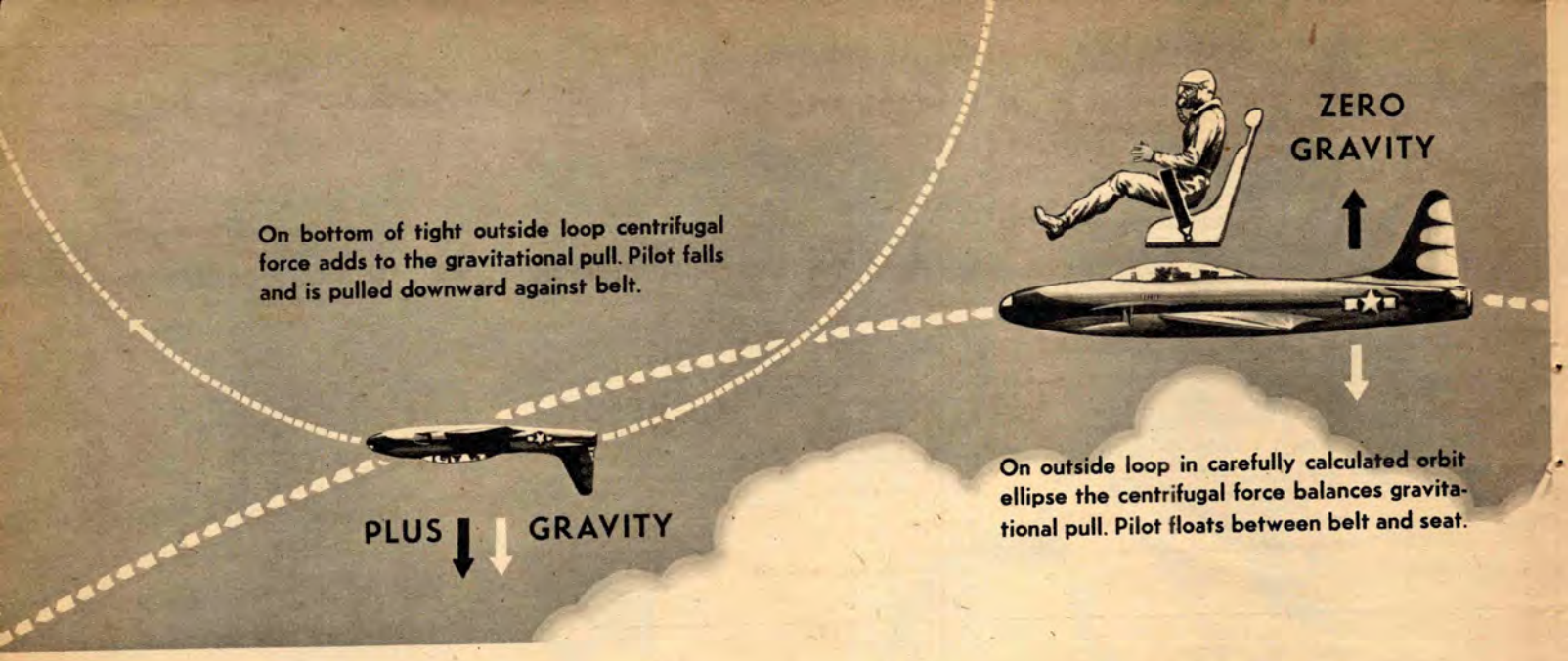
This very year simian astronauts will rocket aloft to help USAF scientists prepare Man for the hazards of travel into cosmic space

By RICHARD C. EARLY

■ A new super-rocket will go screeching into the ionosphere this year with its first supercargo of passengers.

They won't be humans—yet. These first living astronauts will be guinea pigs, chimps, goats, and perhaps other laboratory mammals. Within their supersonic ark, these pioneer space voyagers will be wired-up to record physiological behavior such as pulse rates, respiration, reaction to heat and G forces. What the experts of the U.S. Air Force's Department of Space Medicine learn from this and subsequent experiments will pave the way for

FRANK TINSLEY


ZERO GRAVITY
On bottom of tight outside loop centrifugal force adds to the gravitational pull. Pilot falls and is pulled downward against belt.
PLUS GRAVITY
On outside loop in carefully calculated orbit ellipse the centrifugal force balances gravitational pull. Pilot floats between belt and seat.

the safe ascent, later on, of human rocketeers.

Taking animals for supersonic rides is just one phase of the unusual research which has been going on for three years at Randolph AFB, San Antonio, Texas, under the guidance of four scientists from Germany. Their activities cover all the conceivable—and some rather inconceivable—hazards of travel outside the earth's atmosphere. Their research also includes the methods Man might use to get himself this far out on the limb *and back* again.

It is little wonder that the flying cadets and other habitués of Randolph AFB often speak of the scientists as the "Buck Rogers Boys." This is well-meant and implies not a little awe, since local rumor has it that Drs. Hubertus Strughold, Konrad Buettner, Heinz Haber, and Fritz Haber were key men in some of Germany's most fantastic V-weapon research.

At their Randolph AFB office, stand (left to right): Dr. Heinz Haber, astronomer; Dr. Fritz Haber, aeronautical engineer; Dr. Hubertus Strughold, physiologist and director of Department of Space Medicine, and Dr. Konrad Buettner, bio-climatologist.

Despite the remarkable amount of data they now have on hand, these scientists—who serve under the direction of Major General Harry G. Armstrong, Surgeon General of the USAF—speak conservatively of their research: "Space medicine is in relatively the same stage as was aviation medicine in the late Twenties."

To draw analogy, you recall that our speediest fighters then did a whopping 200 miles per hour; and when our flyers reached 25,000 ft. they could brag about it as a feat. Men have recently flown six times this fast and three times as high into the stratosphere. Bridgeman, Mays, Yeager, Everest, et al have made such flights safely and even with reasonable comfort, thanks to the progress of aviation medicine. The aero-medical people, however, have always had to catch up with the aero engineers. They lag slightly even today, since we have succeeded in streamlining the planes better than we streamlined the pilots.

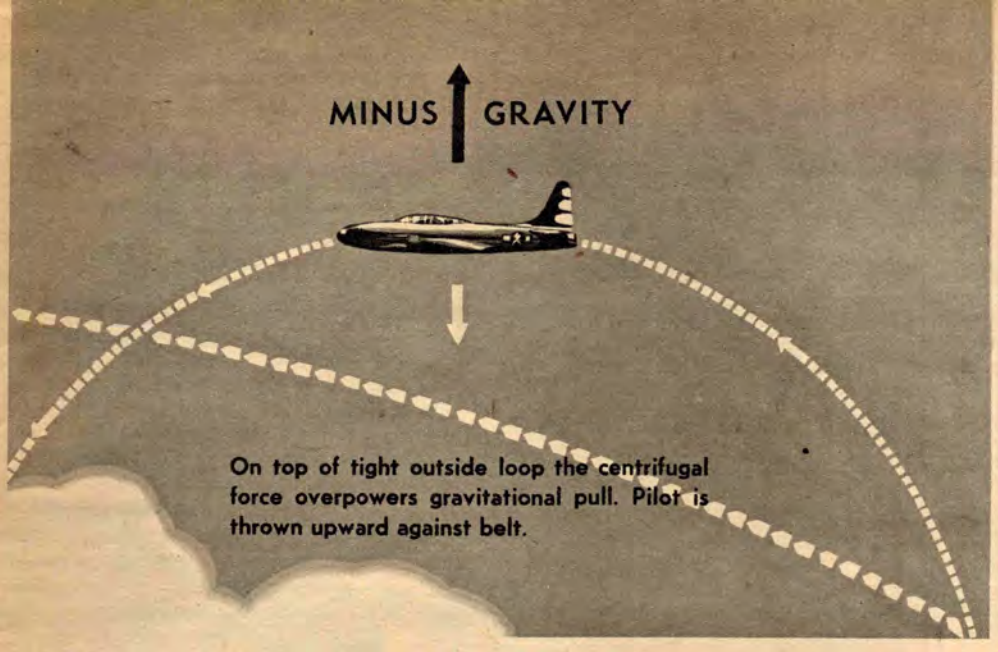
Space medicine, on the other hand, must have the answers in advance, if those first astronauts are to return alive and healthy. And aside from the humanitarian aspect, the team of space experts points out that, "In view of the tremendous expenditure required to approach space, it would be foolish to jeopardize the possible success of a flawless machine by human failure. Before the plans for the first space ship can be laid out, the science of space medicine must have solved, as completely as possible, the human problems involved in space flight."

Dr. Buettner explained at this point, "In the ionosphere a man would be subjected to some strange and unnatural conditions. We know in a general way right now what these conditions will be. What we don't know is how humans will react under this environment. We hope to simulate some of these conditions in the laboratories here and observe human reactions to them. Only this way will we be able to prepare the man and arm him against these space hazards."

Strughold and company were too polite to say so out loud, but the implication was clear that nobody had better attempt to make a hero of himself by stowing away in a V-2 or a Viking until the Department sends up a few of these laboratory trial balloons, plus a few monkeys.

The gravity-free state is their top-priority problem at the moment. The astronaut, they say, will be weightless for long periods of time. One's body, traveling in the same orbit as the ship, remains in the same state of delicate balance that keeps a satellite going without any power. You no longer weigh anything. You float through the air with the greatest of ease. To get from one side of the cabin to the other you would have only to push off from the wall or floor, as you would in a swimming pool.

This may turn out to be an exhilarating experience. It may also be such a terrifying ordeal that you would blow your top after just a few minutes of this "free flight." The space men are not certain, as yet, which it would be. They think you would have a continual sensa-



On top of tight outside loop the centrifugal force overpowers gravitational pull. Pilot is thrown upward against belt.

tion of falling into a bottomless pit; but even if you enjoyed the experience subtle disturbances within the nervous system might make you sick as a dog later on.

Through simulation, the Department of Space Medicine seeks now to prolong an artificial gravity-free state for sufficient time to study human reactions. Gen. Armstrong, our number-one flight surgeon, designed the first successful low-pressure chamber back in the days when he was a Wright Field captain. By placing first animals, then humans in the chamber, we learned without ever going higher than a two-story building what really happens to a man at high altitudes. This simulation saved the lives of countless pilots and led to the development of today's reliable oxygen masks and pressurized cabins. But the general is the first to admit that simulating zero gravity will be a much neater trick.

To serve their purposes, this state of weightlessness must be achieved in much the same way as it would occur in space flight. The learned doctors have figured out a ballistic trajectory that happens to be the same kind of perfect ellipse which is followed in the orbits of heavenly bodies. They will sort of hitch their wagon to a star, so to speak, by having a specially-equipped T-33 Shooting Star fly around this curve at just the right speed to imitate the ballistic trajectory.

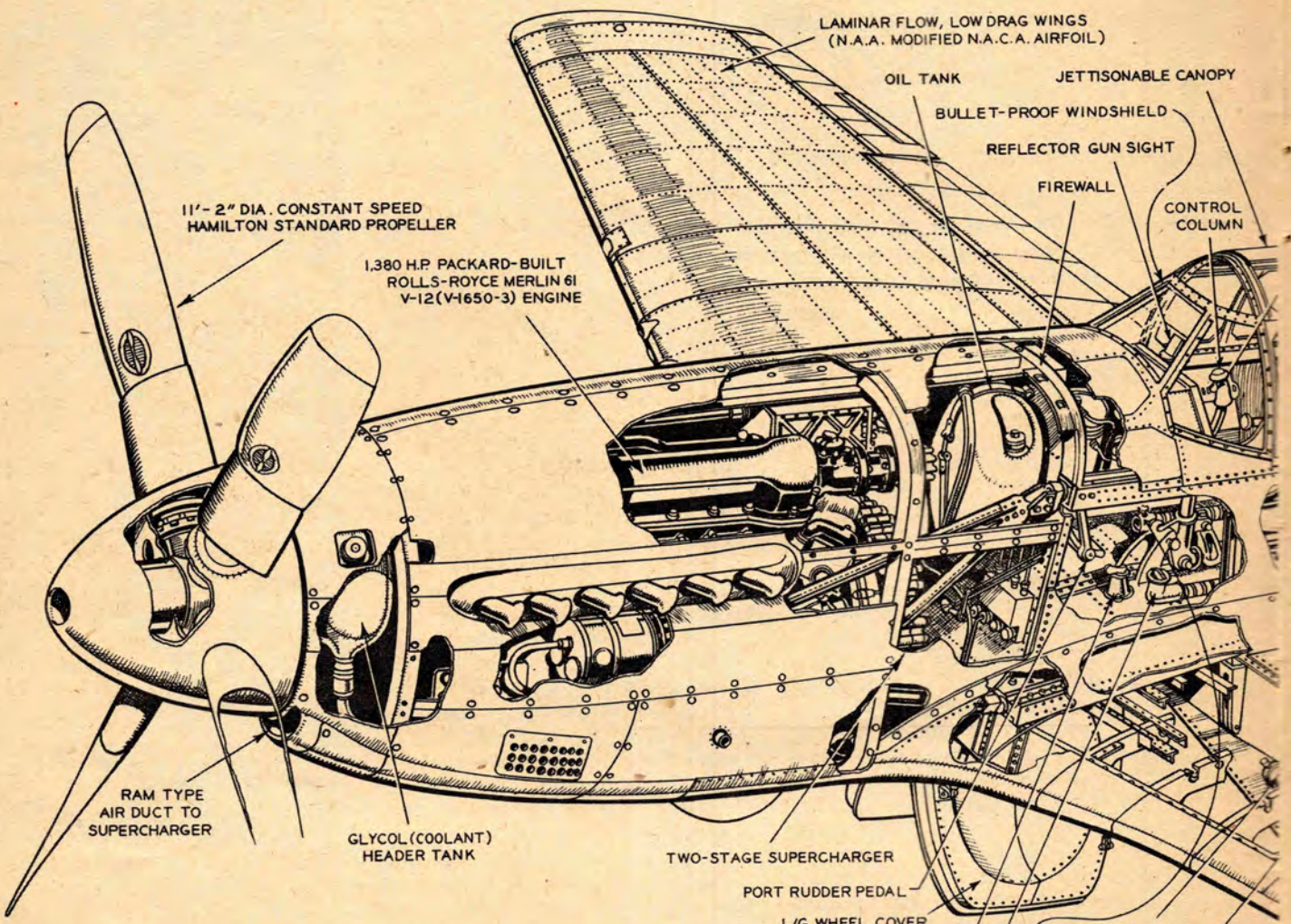
During the time that the T-33 is in this magic curve—which, on paper, looks like the top third of an outside loop—both the subject and the pilot will remain suspended between seat and safety belt in a state of zero gravity—neatly in balance between centrifugal force and the forces of gravity and inertia. The subject will, of course, be wired up with all sorts of instruments and gadgets for recording his responses. This 2½-mile curve is shown in the accompanying diagram.

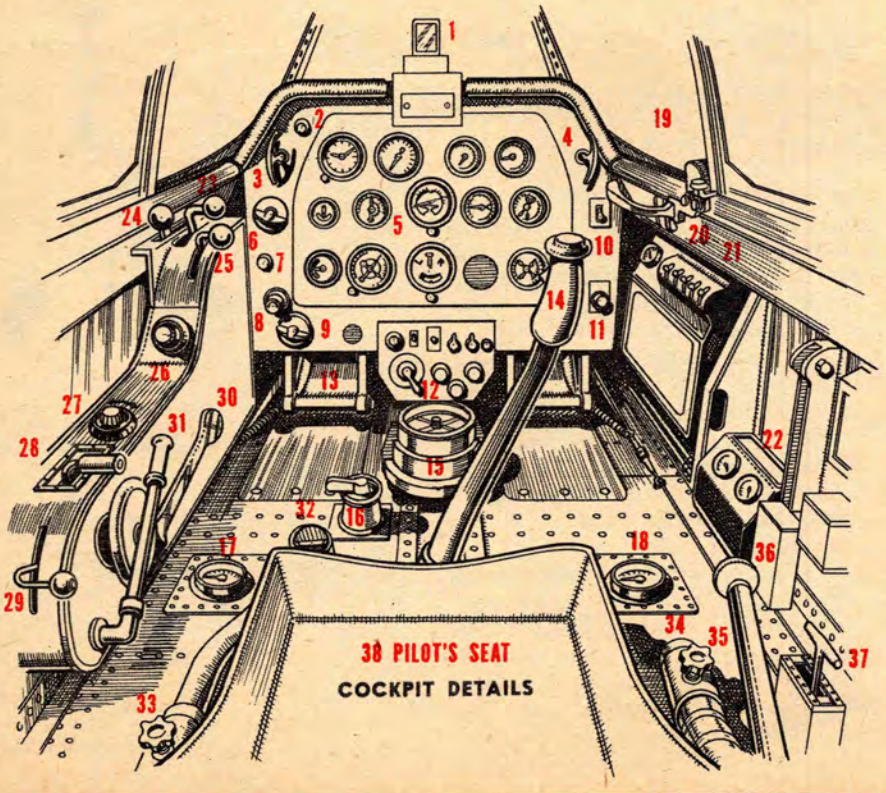
Dr. Fritz Haber explained that, "Because no pilot would be able to fly such a trajectory accurately, we intend to use a special auto pilot which is activated by a 'three-dimensional accelerograph.' Air friction, and resistance which spoils all theoretically perfect trajectories, will be counteracted by the thrust of the powerplant, and the plane's speed will be a constant 450 miles an hour around the parabola."

The pilot and subject will be weightless for only 35 seconds. They can flatten out the curve over a longer distance and maintain a "sub-gravity" of 0.5G for about a minute. The space men admit that they won't have very long periods for observation, but that by selecting certain problems or phases for investigation at a time they can learn a lot during the short interval.

The reason why the Department of Space Medicine is going to such great lengths to make you weightless the hard way is that so many of one's natural actions and reactions may be changed. The muscle sense which governs so many of your movements from childhood will be short-circuited, since these work either with or against gravity. In space you won't know your own strength: nothing weighs anything, yet your muscular strength remains as great as ever. You'll have to orient yourself optically; and unless you have a better sense of balance (*Continued on page* 73)

AIR PROGRESS:

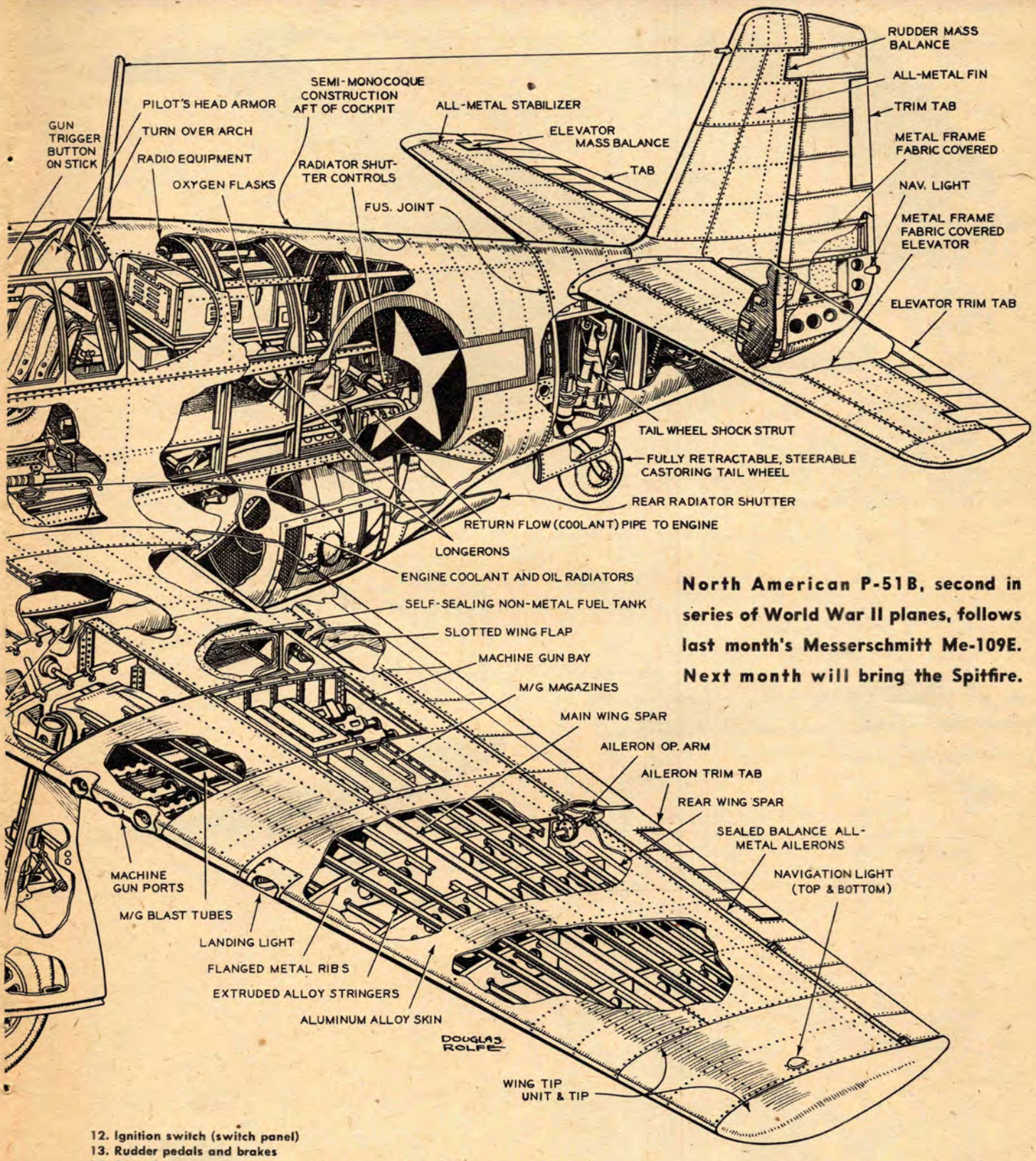

LAMINAR FLOW, LOW DRAG WINGS
(N.A.A. MODIFIED N.A.C.A. AIRFOIL)
OIL TANK
JETTISONABLE CANOPY
BULLET-PROOF WINDSHIELD
REFLECTOR GUN SIGHT
FIREWALL
CONTROL COLUMN
11'-2" DIA. CONSTANT SPEED HAMILTON STANDARD PROPELLER
1,380 H.P. PACKARD-BUILT ROLLS-ROYCE MERLIN 61 V-12 (V-1650-3) ENGINE
RAM TYPE AIR DUCT TO SUPERCHARGER
GLYCOL (COOLANT) HEADER TANK
TWO-STAGE SUPERCHARGER
PORT RUDDER PEDAL
L/G WHEEL COVER
FUEL SHUT-OFF VALVE
COCKPIT HEATING OUTLET
L/G OP. JACK
COCKPIT COLD AIR OUTLET
RADIATOR SCOOP AND SHUTTER
WIDE TRACK LANDING GEAR, HYDRAULICALLY OPERATED, RETRACTS UPWARDS AND INWARDS INTO WING CENTER SECTION



1. Reflector gunsight
2. Windshield defroster
3. Port gun charging handle
4. Starboard charging handle
5. Instrument flight panel
6. Fuel valve
7. Starter button
8. Primer
9. Fuel valve
10. Gun heater control
11. Radio control

MUSTANG FIGHTER

By DOUGLAS ROLFE

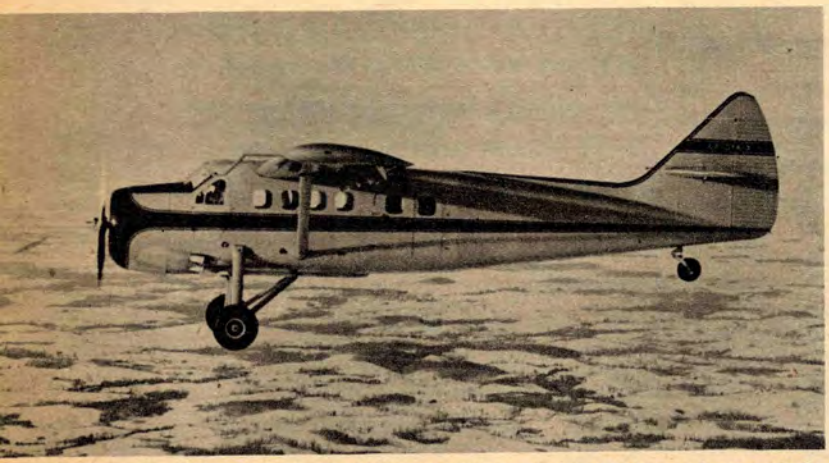


North American P-51B, second in series of World War II planes, follows last month's Messerschmitt Me-109E. Next month will bring the Spitfire.

12. Ignition switch (switch panel)
13. Rudder pedals and brakes
14. Control column
15. Magnetic compass
16. Fuel shut-off
17. Port fuel tank gauge
18. Starboard tank gauge
19. Canopy emergency release
20. Generator ammeter
21. Switches
22. Oxygen system regulator
23. Mixture
24. Throttle
25. Propeller pitch manual control
26. Aileron tab control
27. Rudder tab control
28. Radiator scoops control
29. Flap control
30. Landing gear selector lever
31. Tail wheel lock
32. Cold air duct
33. Cold air control
34. Warm air duct
35. Warm air control
36. Hydraulic hand pump
37. Automatic recognition device control
38. Pilot's seat

North American B-45 Tornado used by General Electric Co. for in-flight testing of turbo-jet engines. Test plant is carried under bomb bay.

Development Highlights



Otter built by de Havilland of Canada has 600 hp engines, seats 8.

SAAB 210 Draken is Sweden's first Delta wing research plane.

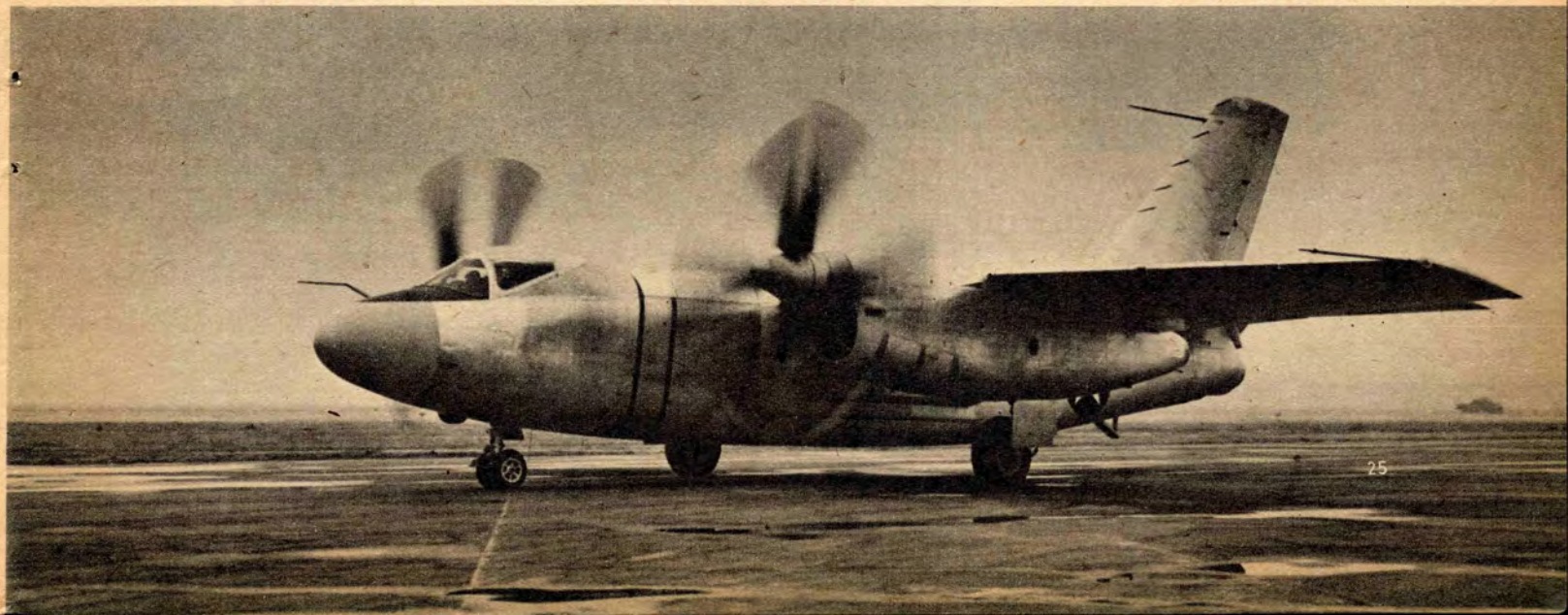
Commonwealth CA-22 basic trainer built in Australia. Engine 450 hp.

Another Aussie plane, Commonwealth Woomera, recco-bomber.

The Grumman Cougar. Designated F9F-6, this latest Navy fighter is swept-wing successor to Panther. Rated in "over 600 mph" class.

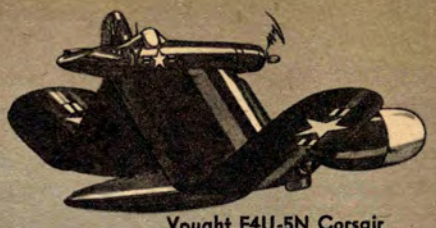
Boeing XB-52 Stratofortress, Air Force heavy eight-jet bomber bears a striking resemblance to the B-47. No information on plane available.

North American XA2J-1 Savage, experimental turbo-prop-powered-carrier-based attack bomber. Has two Allison T-40s of 5500 hp each.

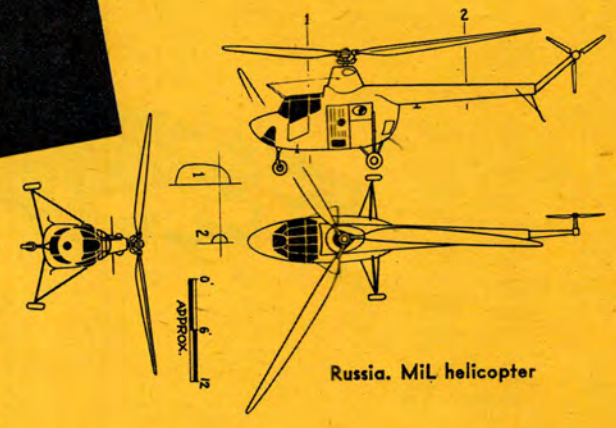


THREE VIEWS and ODD VIEWS

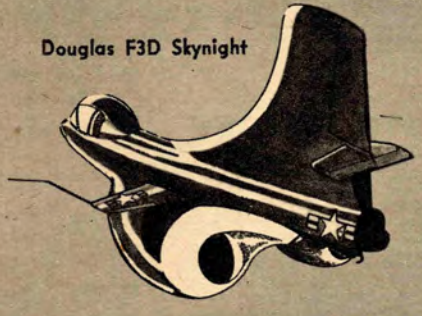
Bjorn Karlstrom and Shozo Abe pool talents to bring this plane parade



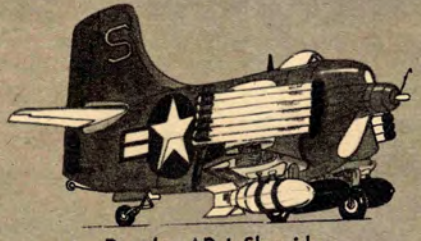
Vought F4U-5N Corsair



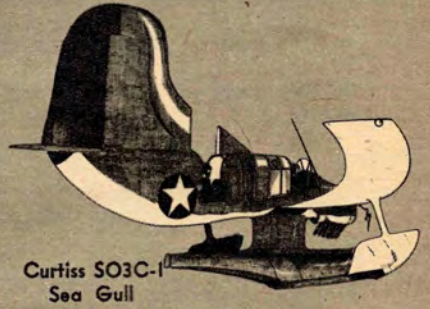
Russia. MiL helicopter



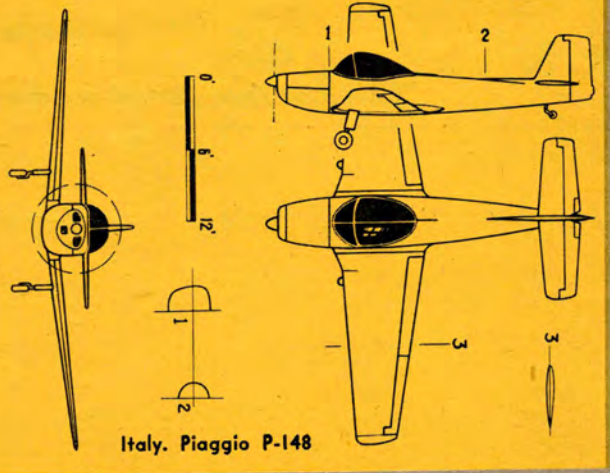
Douglas F3D Skynight



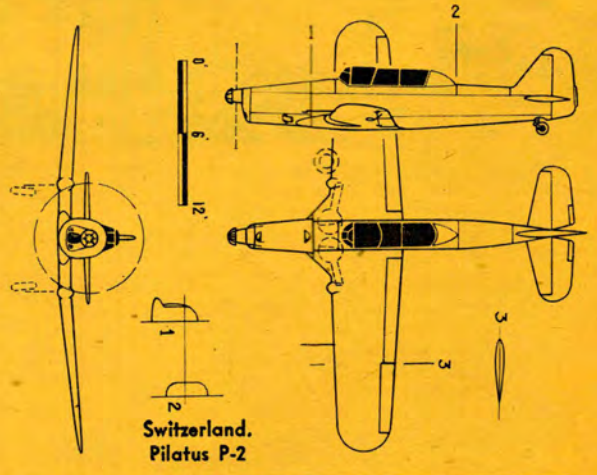
Douglas AD-1 Skyraider



Curtiss SO3C-1 Sea Gull

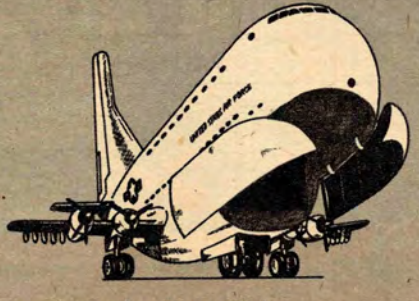


Italy. Piaggio P-148

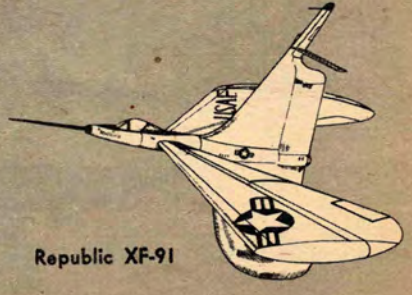


Switzerland. Pilatus P-2

de Havilland Vampire

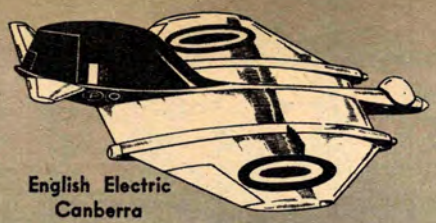


Douglas C-124 Globemaster



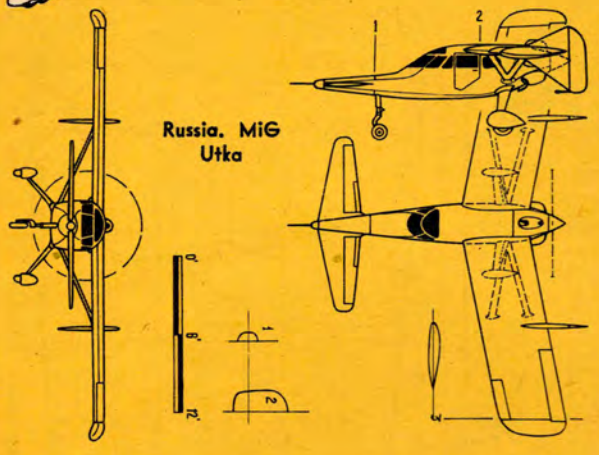
Republic XF-91

Lockheed F-80
Shooting Star

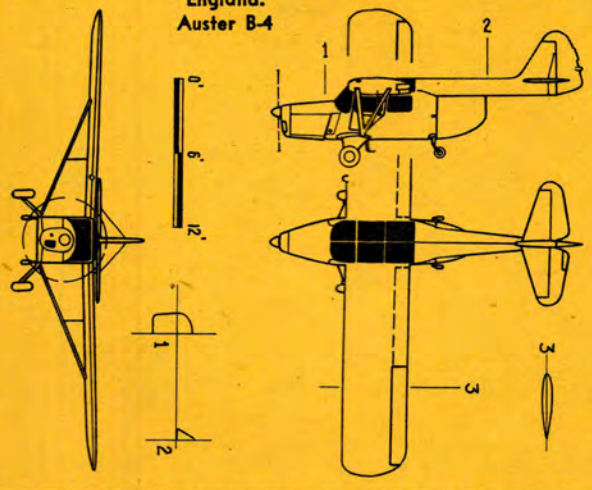


English Electric
Canberra

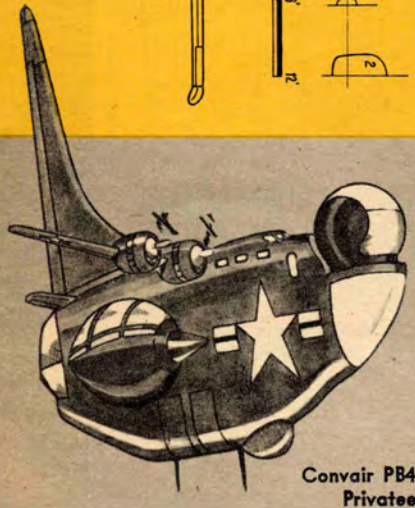
de Havilland Sea Hornet



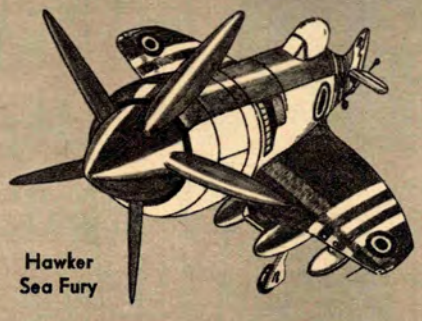
Russia. MiG
Utka



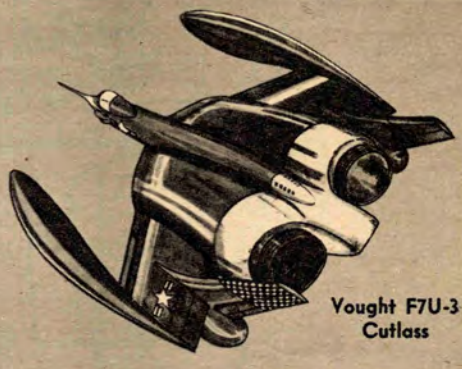
England.
Auster B-4



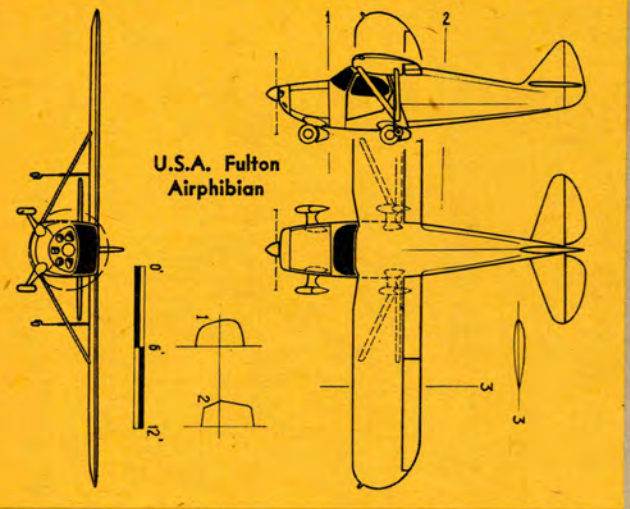
Convair PB4Y-2
Privateer



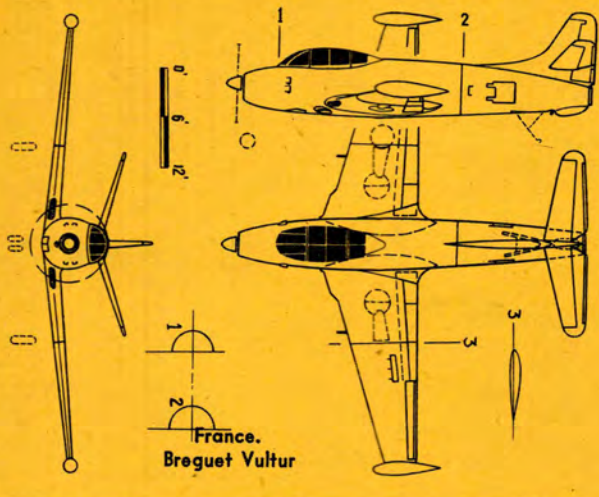
Hawker
Sea Fury



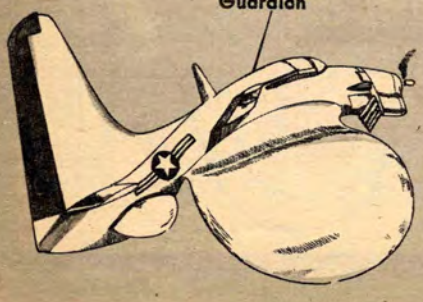
Vought F7U-3
Cutlass



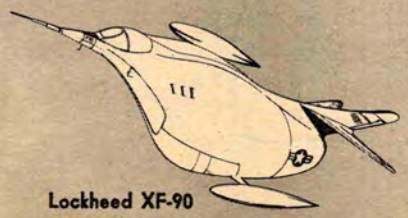
U.S.A. Fulton
Airphibian



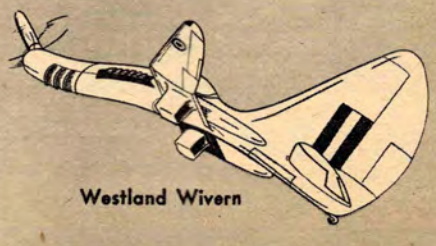
France.
Breguet Vultur



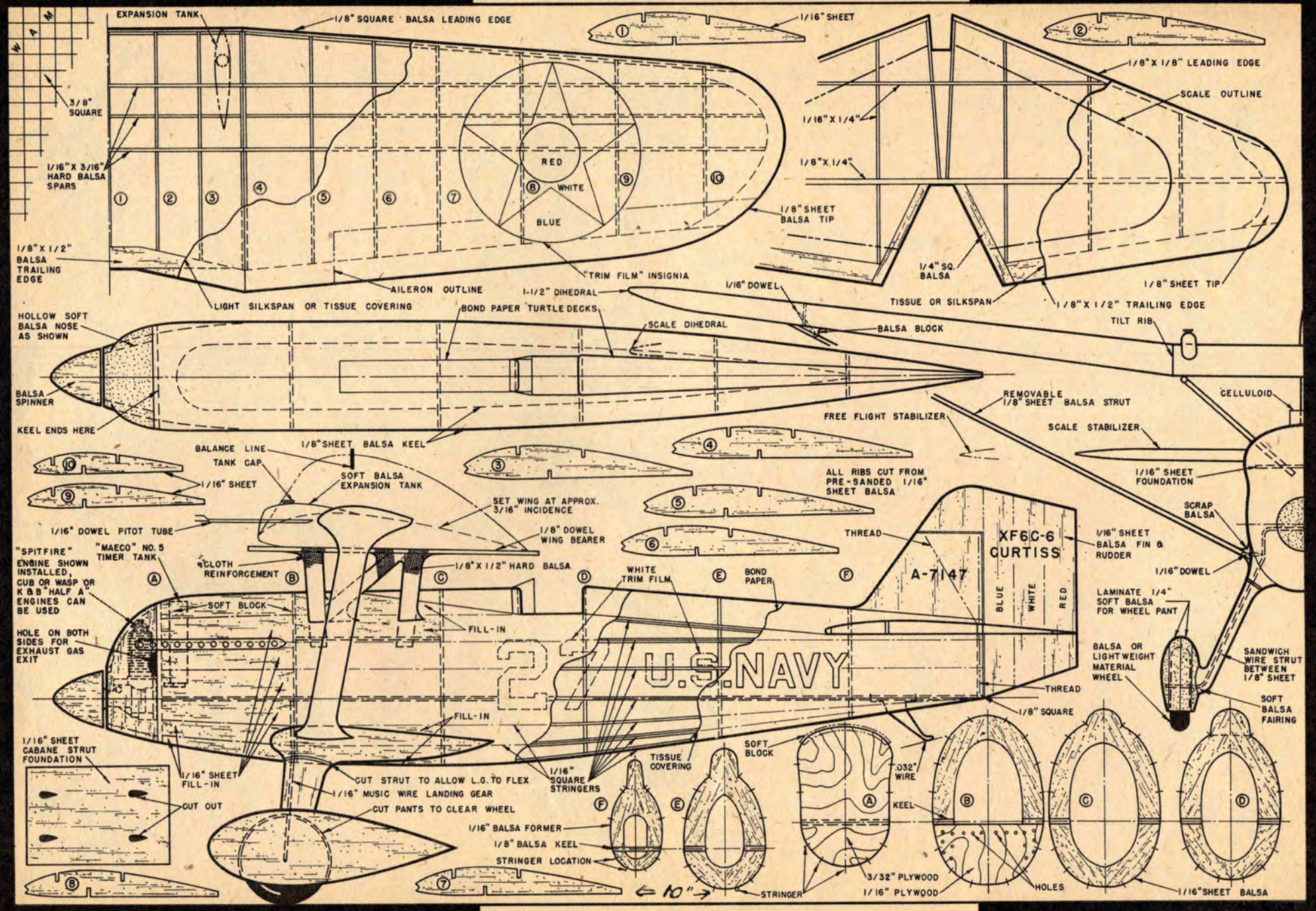
Grumman AF-2W
Guardian



Lockheed XF-90



Westland Wivern


EXPANSION TANK
1/8" SQUARE BALSA LEADING EDGE
1/16" SHEET
3/8" SQUARE
1/16"X 3/16" HARD BALSA SPARS
RED
WHITE
BLUE
1/8"X 1/2" BALSA TRAILING EDGE
AILERON OUTLINE
"TRIM FILM" INSIGNIA
1/8" SHEET BALSA TIP
1/8"X 1/8" LEADING EDGE
SCALE OUTLINE
1/16"X 1/4"
1/8"X 1/4"
1/4" SQ. BALSA
1/8" SHEET TIP
TISSUE OR SILKSPAN
1/8"X 1/2" TRAILING EDGE
LIGHT SILKSPAN OR TISSUE COVERING
1-1/2" DIHEDRAL
1/16" DOWEL
BOND PAPER TURTLE DECKS
SCALE DIHEDRAL
BALSA BLOCK
TILT RIB
HOLLOW SOFT BALSA NOSE AS SHOWN
BALSA SPINNER
KEEL ENDS HERE
REMOVABLE 1/8" SHEET BALSA STRUT
CELLULOID
FREE FLIGHT STABILIZER
SCALE STABILIZER
1/16" SHEET FOUNDATION
BALANCE LINE
TANK CAP
1/8" SHEET BALSA KEEL
SOFT BALSA EXPANSION TANK
1/16" SHEET
ALL RIBS CUT FROM PRE-SANDED 1/16" SHEET BALSA
SET WING AT APPROX. 3/16" INCIDENCE
SCRAP BALSA
1/16" DOWEL PITOT TUBE
1/8" DOWEL WING BEARER
THREAD
XF6C-6
CURTISS
A-7147
BLUE
WHITE
RED
1/16" SHEET BALSA FIN & RUDDER
1/16" DOWEL
"SPITFIRE" ENGINE SHOWN INSTALLED, CUB OR WASP OR K&B "HALF A" ENGINES CAN BE USED
"MAECO" NO. 5 TIMER TANK
CLOTH REINFORCEMENT
1/8"X 1/2" HARD BALSA
WHITE TRIM FILM
BOND PAPER
LAMINATE 1/4" SOFT BALSA FOR WHEEL PANT
SOFT BLOCK
FILL-IN
HOLE ON BOTH SIDES FOR EXHAUST GAS EXIT
U.S.NAVY
BALSA OR LIGHTWEIGHT MATERIAL WHEEL
SANDWICH WIRE STRUT BETWEEN 1/8" SHEET
THREAD
1/8" SQUARE
SOFT BALSA FAIRING
1/16" SHEET CABANE STRUT FOUNDATION
1/16" SHEET FILL-IN
CUT OUT
CUT STRUT TO ALLOW L.G. TO FLEX
1/16" MUSIC WIRE LANDING GEAR
CUT PANTS TO CLEAR WHEEL
1/16" SQUARE STRINGERS
TISSUE COVERING
SOFT BLOCK
.032" WIRE
KEEL
1/16" BALSA FORMER
1/8" BALSA KEEL
STRINGER LOCATION
STRINGER
3/32" PLYWOOD
1/16" PLYWOOD
HOLES
1/16" SHEET BALSA
10"

Curtiss XF6C-6 Conqueror-powered racer led first Thompson Trophy race field for 17 laps at 207 mph, crashed when gas fumes KO'ed pilot.

HALF-A FREE FLIGHT SCALE:

Curtiss Racer

Marine pilot Capt. Arthur H. Page almost won first Thompson Trophy Race in this Navy parasol wing racer which has been a favorite with the model builders since 1930

By WALTER A. MUSCIANO

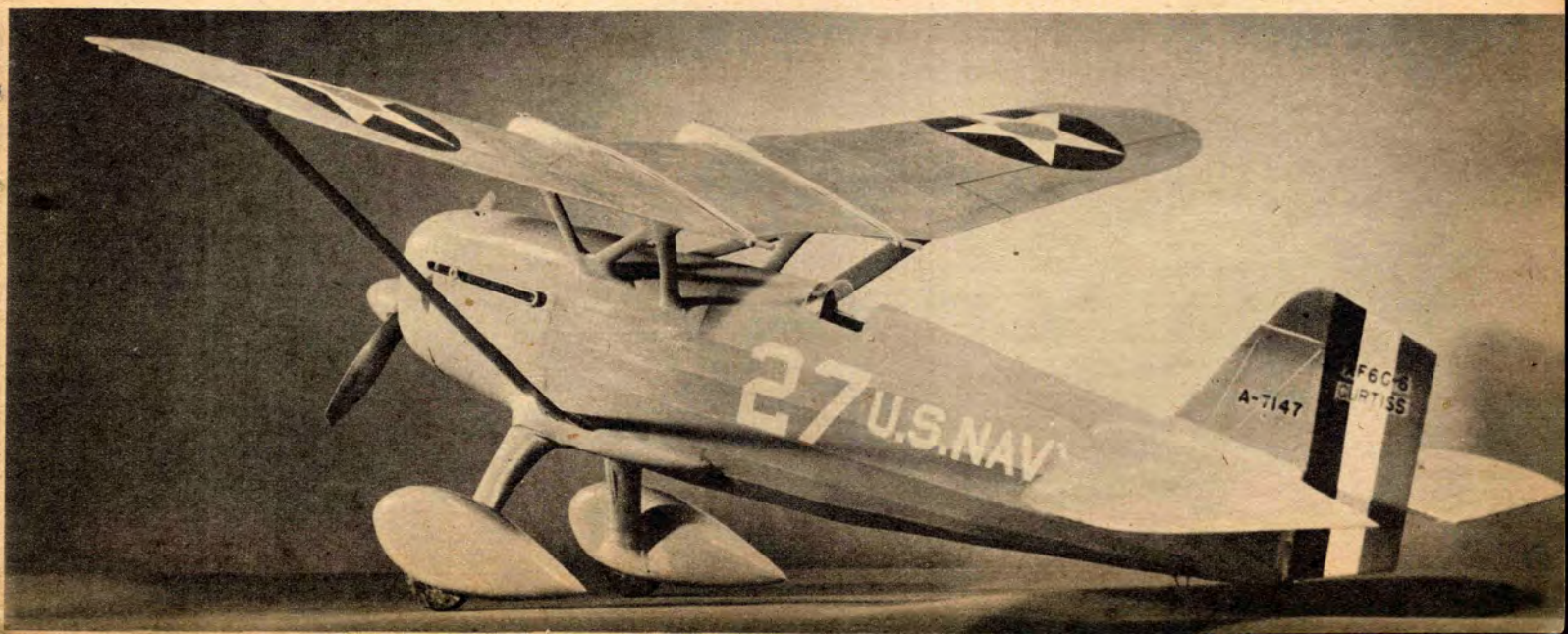
■ This snappy 600 hp. Curtiss "Conqueror" V-12 engine powered racing plane featured flush-skin radiators on the upper surface of the wing, and this feature was considered to be one of the main reasons for its fine performance.

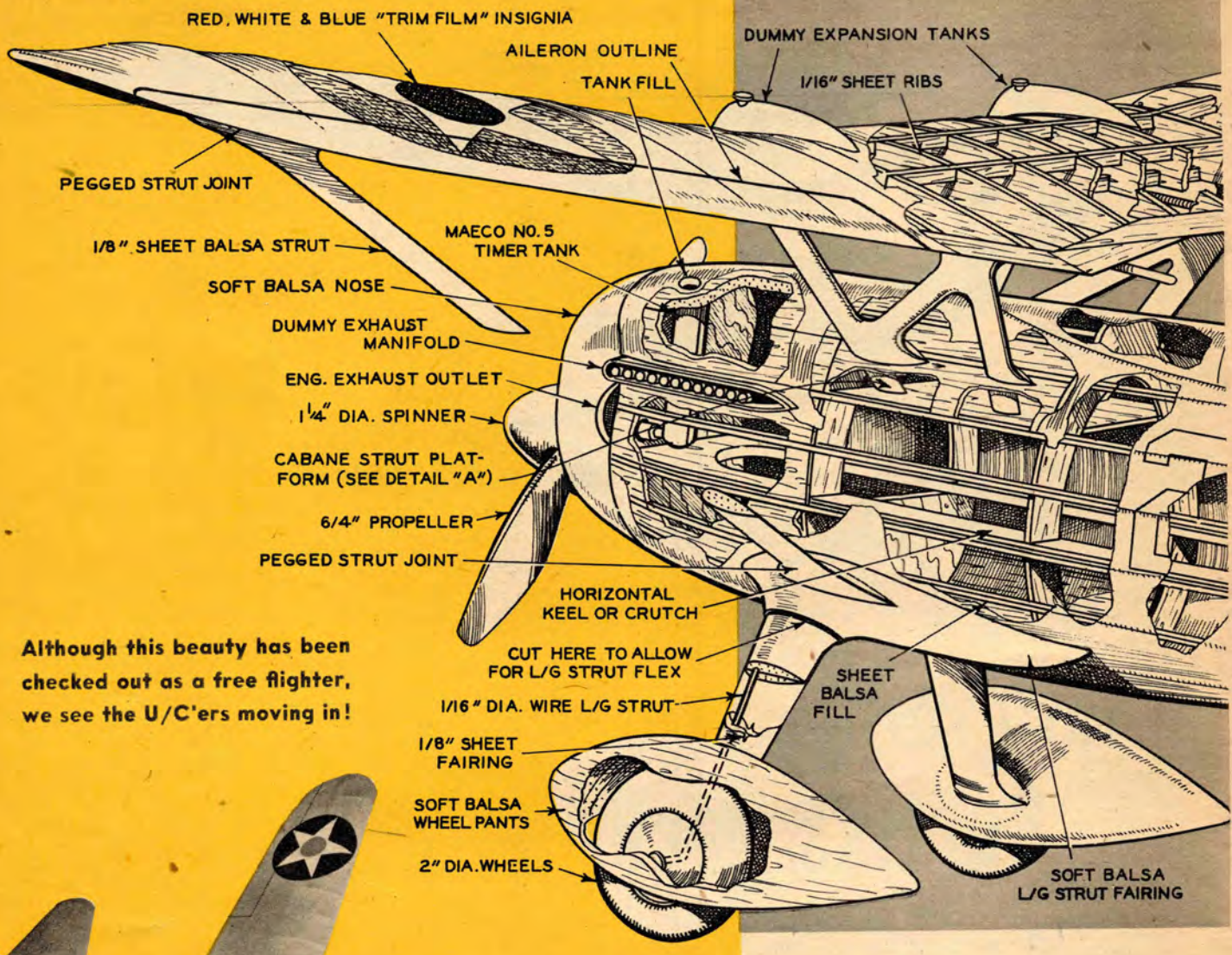
Meticulous care was taken to insure perfect streamlining through generous filleting at all strut joints and, as can be seen, enormous pants faired the wheels. It will be noted that the design is typical of the Curtiss craft of that era, with strong resemblance to P-6E, F11C-2 etc., but with the lower wing removed.

We thank G. A. Page of the Curtiss-Wright Corporation for information on the full-scale craft which greatly contributed to the success of this model; J. "Red" Rehfield was also most helpful.

Construction is started by cutting ⅛" horizontal keel and 1/16" formers and 3/32" bulkhead to shape.

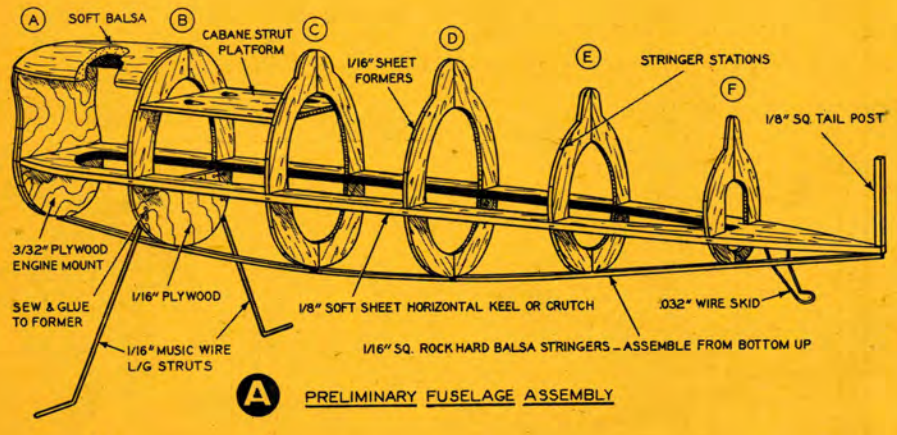
Wing is mounted with rubber bands in "pop-off" fashion, can be permanently mounted if desired. For Half-A engines. Scaled 1" to 1'.





Although this beauty has been checked out as a free flighter, we see the U/C'ers moving in!

All through the Thirties the Page Racer was a classic favorite for rubber-powered scale modelers. It was while reminiscing about the good old days that Musciano decided to try the XF6C-6 with Half-A power and—brother, did he have some startling results! Walt reports that this 156 sq. inch model has turned in flights of several minutes on motor run of 22 sec.

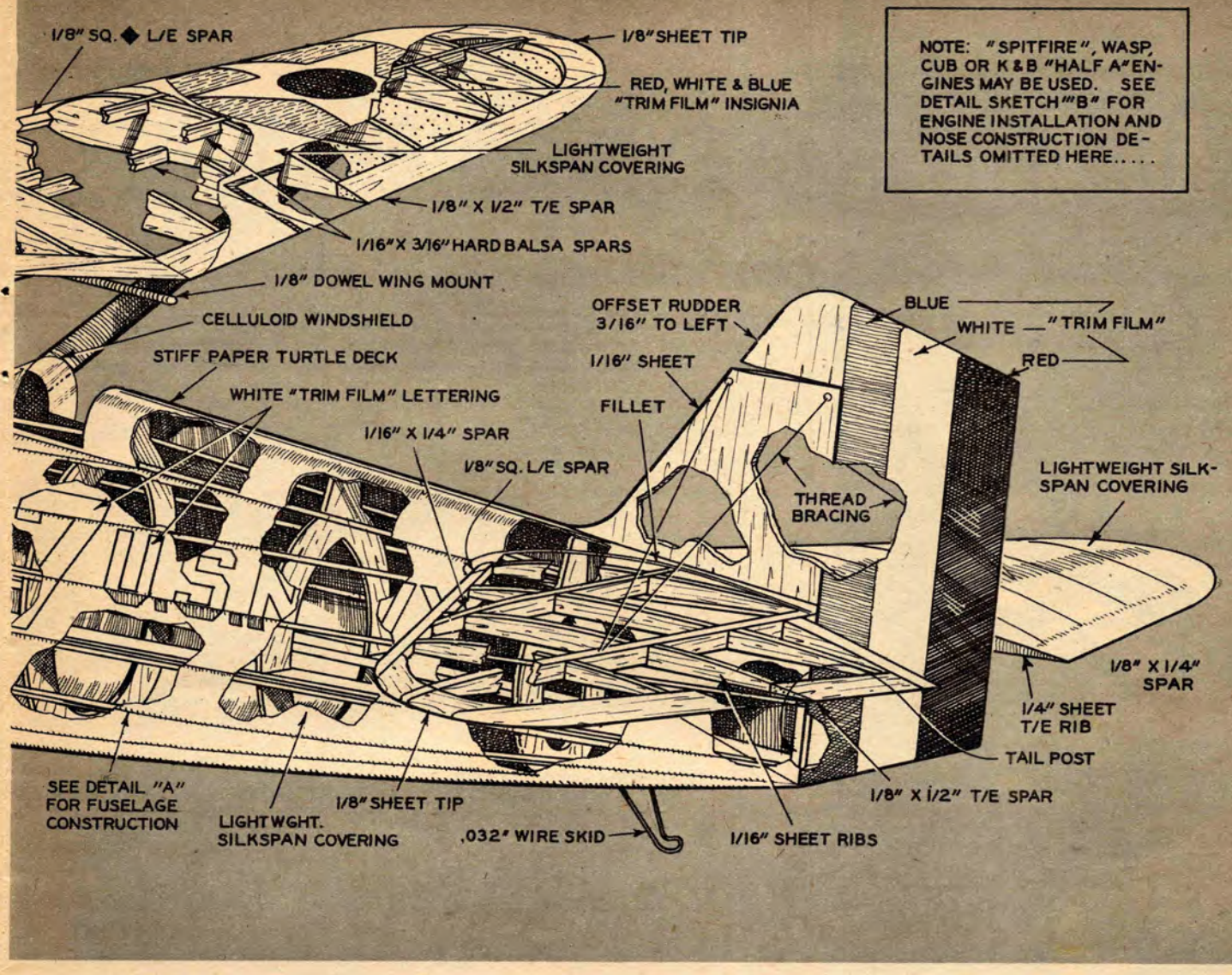


A PRELIMINARY FUSELAGE ASSEMBLY

It is suggested that all balsa be well sanded before being cut to shape. In this way all excess nap will be removed from the balsa, and the weight thus saved can be used on finish and other external detail. Now the landing gear should be bent to shape and sewn to the 1/16" plywood foundation. Apply several coats of cement.

Cement all the formers to the keel and, when dry, add stringers. These should be 1/16" square rock-hard balsa. Notice that stringers are cemented directly to the outside of formers without the customary notching. This was done in order to obtain a smooth covering job without the formers being visible. With this method it is not necessary to scallop the formers. Stringers should be applied beginning at the keel and working up and down on both sides simultaneously. Cement the two 1/16" stringers together at the fuselage rear to form a strong stabilizer foundation. Install the 1/16" cabane strut foundation between formers B & C as shown. Cement tailskid to keel at this time.

The cabane struts are cut from very hard balsa and trimmed to a



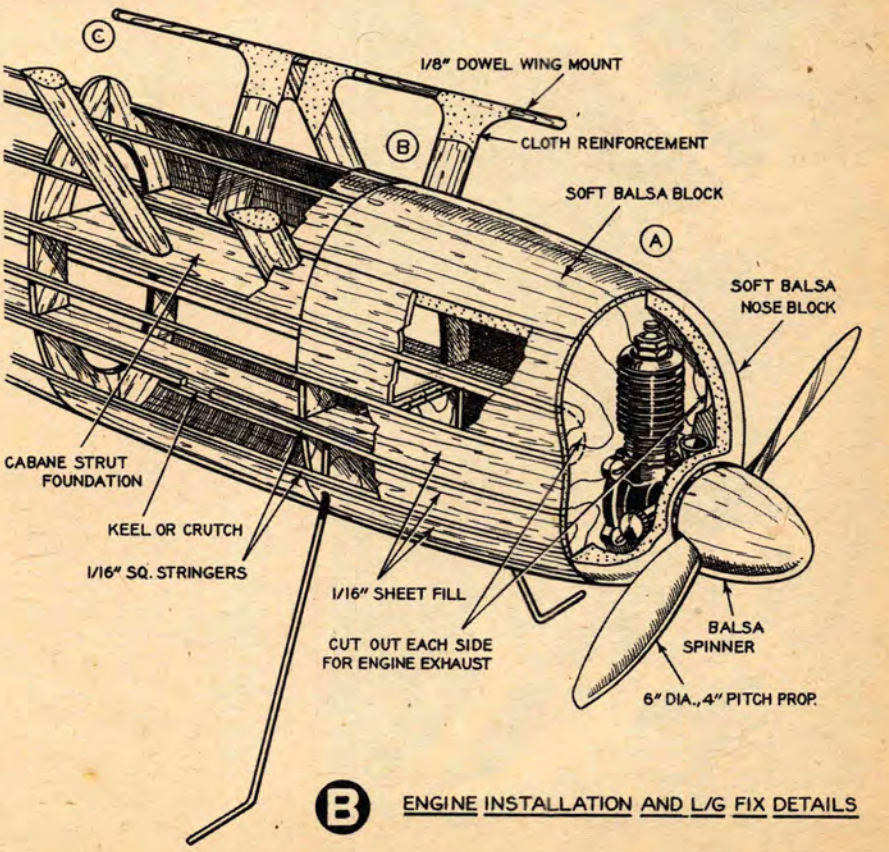
NOTE: "SPITFIRE", WASP, CUB OR K&B "HALF A" ENGINES MAY BE USED. SEE DETAIL SKETCH "B" FOR ENGINE INSTALLATION AND NOSE CONSTRUCTION DETAILS OMITTED HERE.....

streamline cross section. These are then firmly cemented in place to both the 1/16" foundation and stringer. Be sure rear struts are slightly lower in order to provide required incidence angle. Insert diagonal strut. Now cut the 1/8" straight-grain dowels to correct length and firmly attach them to cabane struts by means of fine cloth strips and cement. Install the fuel tank of your preference.

Using soft 1/16" sheet, fill in the nose portions of fuselage where indicated on plan. Add dead-soft balsa nose block and cowl top. Now, carve and sand nose to shape. Remove nose block and carefully hollow as shown. Entire fuselage is next covered with tissue or lightweight Silkspan, with clear dope as the adhesive. Cement the bond paper turtle-decks in place. Water the tissue lightly; when thoroughly dry, apply two thin coats of clear dope.

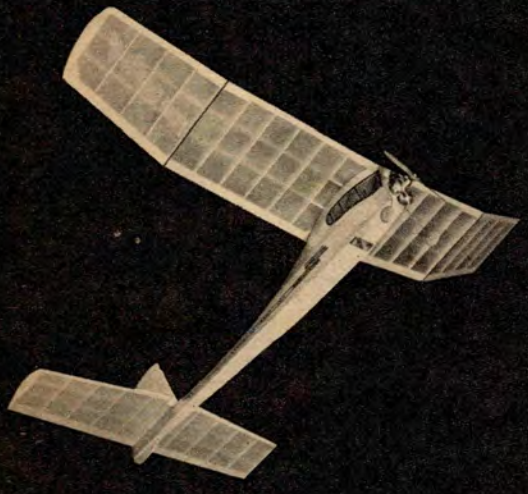
The empennage is quite simple. Fin and rudder are cut from 1/16" soft sheet balsa for simplicity and to give the added weight required in tail for correct static balancing.

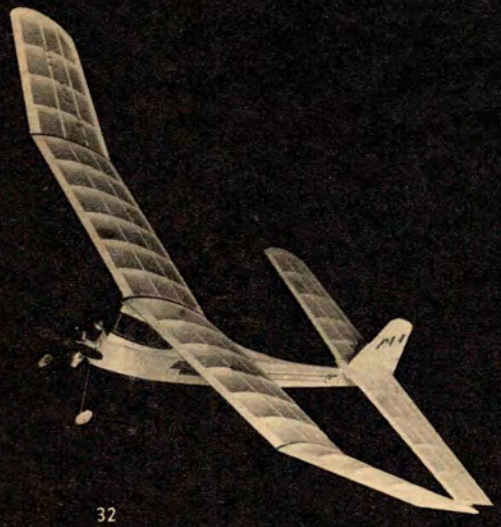
(Further construction details may be found on the full-size plans available.)



B ENGINE INSTALLATION AND L/G FIX DETAILS

All-American Pan-Am Plane



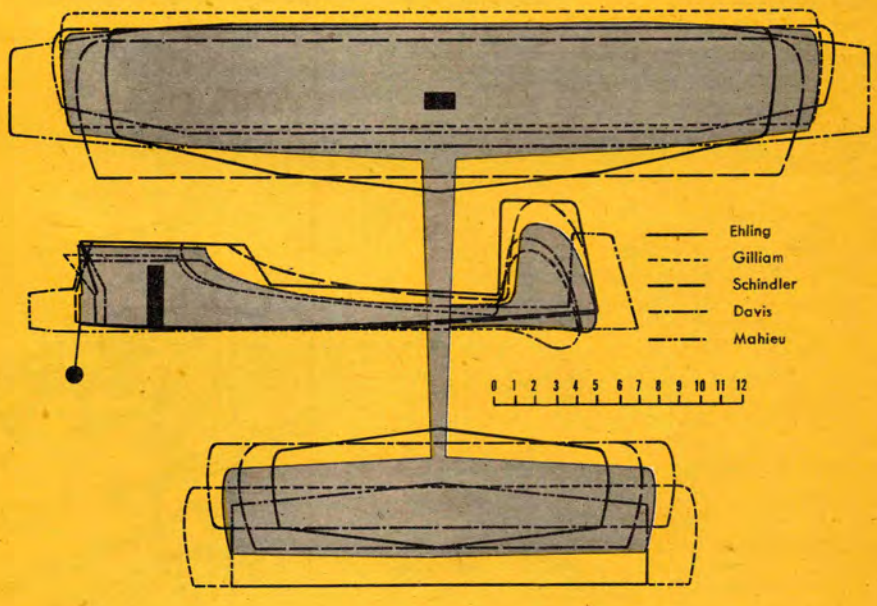


AT's Air-Model Design Board reviews some outstanding PAA-Load planes and shows you what the "average" load-lifting free flight looks like. Use this as a guide for '52 competitions

■ When five men work independently on the same design problem, normally we could expect five different results as each man will design according to his experience and local flying conditions. And if we were to look at the Pan American PAA-Load entries on the flying line we would say that the above statement is true. However, when these same models are drawn to a common scale and superimposed one on another we wonder if there is so much of a difference between them.

To illustrate the above point, we took five payload models, by different designers who specialize in the field, and superimposed their outlines as shown on the drawing. What would you say to their respective differences? It would seem that the five men came pretty close to the basic design.

The similarity does change some on closer inspection by taking the extremes for an example.



Five Equals One

Analysis of five outstanding payload designs which participated at the last National Contest in Dallas, Texas, produced this interesting pattern. Configurations studied consisted of those designed and flown by Lew Mahieu, Denny Davis, Wayne A. Schindler, Paul Gilliam and Frank Ehling—all noted contest flyers. The "All-American" design resulting has been projected in somewhat larger size in a thoroughly tested model shown at left in photo form and at the right in detailed plans. Purpose of this presentation is to serve as a guide for original designing in the Pan American World Airways' 1952 PAA-Load events which again will be run off all over the country. These events will culminate in the big Nats competition scheduled for Los Alamitos Naval Air Station in California which will be the site of the '52 American Championships during late July. Pan-Am is offering cash and watch awards this year.

Frank Ehling's model has the shortest moment arm and also lowest aspect ratio wing. While Paul Gilliam, on other hand, uses a model which has a longer moment arm and higher aspect ratio wing. To make the contrast more pronounced, note that Ehling uses only about 35% stab on a short moment arm whereas Gilliam has 45% on a long moment arm.

Lew Mahieu's model was not specifically designed for payload. He also uses it, with success, for free flight. By having a long nose he was able to locate the C.G. so that it would not change if the passenger is removed or added. On the "composite" outline we minimized this feature as it would have undue influence on the "average."

The side views of the models varied considerably, especially the rudder areas. Compare Mahieu with Ehling on a similar moment arm. The fact that both models perform well, despite their difference in rudder areas, makes one wonder just how much tolerance one can have and still be safe. But, as most of us know, the design differences will cause different flight patterns, although in the end the duration may be identical. So on many occasions it may be the type of flight that may determine the actual layout of the design.

The main purpose of this comparison was to show the variations that can be had with one formula. And this may also be a good place to remind you that a winning model is not necessarily the ideal design to follow implicitly. Frequently a model may win because of local circumstances.

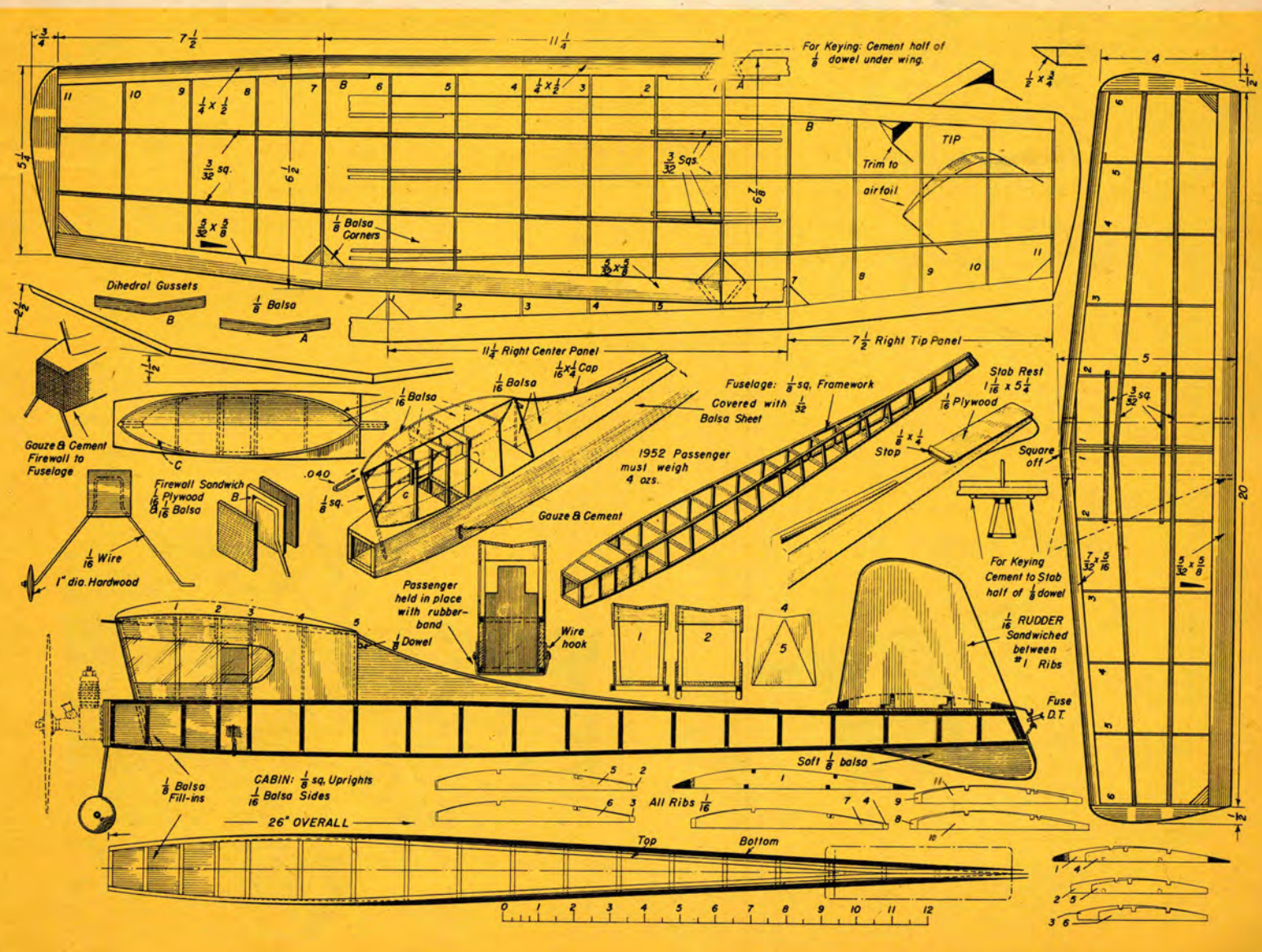
If the 1952 passenger had remained at a 3 oz. minimum, the average outline shown would have been used to construct the "All-American" prototype. However, since the passenger weight was increased to 4 oz., the wing area was increased from 183 sq. in. to 233 sq. in. The stabilizer area was also increased from 76 sq. in. to 90 sq. in.— so the model shown can be used to good advantage for the 1952 season.

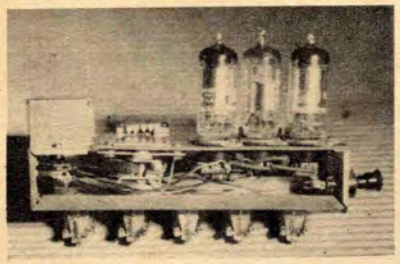
It was found that the increase of passenger weight decreased the climb ability slightly, but because of increased wing area, the glide remained unchanged. Performance should not drop even though there is increase of passenger's weight. However, be sure to use a two-wheel landing gear as the model will require a bit longer take-off distance.

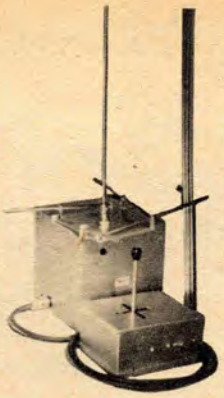
The construction of the model also followed the average of the five models with leanings toward sturdier side—basic framework covered with balsa sheet. The drawing shows the construction details. The portion behind the cabin is covered with tissue to form a triangular fairing.

The flying characteristics of this model are similar to the standard pylon type: right power and left glide.

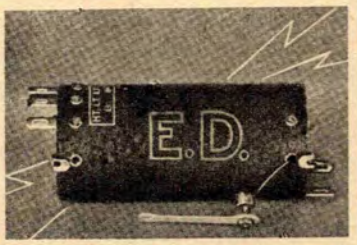
	Wing Area	Stab Area
Ehling	180	65
Gilliam	170	78
Schindler	198	85
Davis	175	87
Mahieu	190	76
The Average	182	78
The 1952 Design	233	90







ROCKWOOD'S 5-CHANNEL



POLK'S E.D.

Radio Control Equipment

Now that the F.C.C. has opened up 27.255 mc. for "license free" operation, R/C will really move into high gear; this up-dated report is especially helpful

By HOWARD G. McENTEE

■ It is possible to procure on the market a number of different R/C units, from a single-channel job, the complete receiving system of which adds only about 8 oz. to your plane, up to multi-control units that will provide five different functions at your command, with a total weight of several pounds.

By far the largest number of active R/C flyers today use only a single channel with an escapement connected to the rudder. Lest the uninitiated may feel that such a simple system is kid stuff and strictly limited in scope, we point out that experienced flyers like Walt Good, Gene Foxworthy, Fran McElwee, and many others have won the majority of past contests, both Nationals and others, with just such simple apparatus. Furthermore, they will probably continue to do so in 1952!

Before proceeding further, let's explain this term "channel" as we generally use it in radio control. As normally stated, a channel is considered to be the radio equipment required to operate a single control element in the plane. Thus, one transmitter and one receiver with the necessary antennas, batteries, etc., constitute one channel, and can generally be considered to operate one control, usually the rudder.

This simple definition becomes a bit confusing, for some experimenters use *two* complete radio channels to work the rudder, one for each direction; and, as if to confuse us even more, one present-day R/C system operates on a single radio channel, but gives you a choice of five separate control operations in the plane, in any order you wish!

It is probably best, therefore, to refer to a system using a single transmitter and receiver as a single-channel system. The five-control arrangement is of this type, but five selective audio tones can be transmitted over the single radio channel.

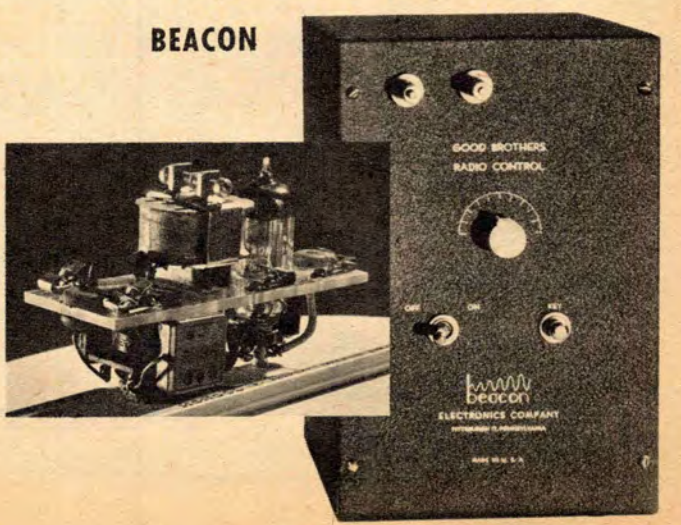
As we have noted, it is possible to get lots of control with a single-channel system and an escapement-operated rudder. With this you can do spot landings, turns, stalls, spins, loops, and many other maneuvers. However, the A.M.A. contest rules for radio control include certain maneuvers that can only be accomplished if you can control more than one surface in the plane—consecutive loops are a good example. Multiple control is thus the ultimate, but every additional channel you add means just that many more gadgets can go wrong. As you may imagine, that's one good reason why many of the best R/C flyers stick to simple equipment—they prefer to spend their time flying, not tinkering!

Much of the present day R/C equipment operates on the amateur bands. We won't go into the various license angles here, since the *Air Trails Model Annual for 1952* carried the story on all the bands. Until recently the 50-54 mc. band has been the most widely used, but now there will be much activity on the 27 mc. amateur band. R/C may now be practised on the spot frequency of 27.255 mc. No amateur operator license is required for this frequency, though it is necessary to fill out a simple form and send it to the F.C.C. With this sort of operation possible, we in this country are now on a par with the modelers in England, South Africa, and other countries, where such operation has been allowed for several years.

There are many good plane designs from which to choose; the one for you depends on whether you want to engage in contest flying, or whether you will go in solely for sport flying. In the past all radio planes were designed with the same idea in mind. The builders wanted a large job to carry the extra weight,

CONTROL RESEARCH

BEACON



TELASCO'S E.C.C. **LIGHTWEIGHT R.C.H.**

one that was very stable in case the radio equipment failed, and the ship had to fly and glide rather slowly, mainly so it wouldn't hit so hard—just in case!

It is generally conceded now that a contest R/C ship is a specialized type; it must be of moderate size, have plenty of power, and fly rather fast. Furthermore it cannot be ultra-stable; it must be able to stall and spin if you want it to.

We will not go into airplane design considerations here, since several very successful R/C ships have been described in past issues of Air Trails. There are more and more ships available in kit form designed especially for R/C work. One of these is Berkeley's Super Brigadier, which is of moderate size. Berkeley also has larger ships that will carry lots of weight for those who want to go in for complex installations. Harold deBolt of Dmeco has just announced the Live Wire for the large A engines, while Veco will also have an R/C plane design on the market. Jasco offers its R/C Master. We believe that many other kit makers will be entering this field soon.

Meanwhile, you can get a good variety of planes suited to radio from past issues of this magazine. Also, there are some free-flight kit planes that may be modified for radio flying.

In general, a radio plane needs rather large cabin area, plenty of strength around the nose and cabin, and a sturdy landing gear. These are the general qualifications of PAA-Load models, kits for which are appearing more and more, and some of which can be adapted very nicely for radio flying.

Radio ships have been getting smaller all the time, until now there are quite a few Half-A radio jobs in use. Half-A radio control has been made practical by the elimination of the ignition system our ships used to require, by miniature radio components developed during and since the war, and of course, by the remarkable tiny engines we now have.

Although the complex control systems used by some experimenters necessitate airplanes of 8-10 ft. spread, powered by Class C or D motors, the average R/C model today has a span of about 6 ft. and a Class B engine supplies all the power it can handle. At the short end of the scale, perfectly practical R/C models with a span of 3½ ft. or less are now being flown by Half-A engines, and the total weight of plane, batteries, radio and all is well under a pound!

It has been mentioned that the majority of R/C work up to now has been accomplished on the amateur bands, with 50-54 mc. by far the most popular, but there is a radio system operating on the so-called Citizens Band, in this case 465 mc.

With more and more frequencies coming into use, it has become possible to operate several planes simultaneously from one spot, something that could not be done before. We have seen as many as four ships in the air at once, all on different frequency bands, and all under perfect control without interference from each other. It is possible to operate two planes on the same band, but this takes careful tuning and test, and is best left to the experts.

Due to the increasing number of entries in the R/C contests, it will probably be necessary to have several planes flying at once on different bands, in order that everyone may have a chance to get in all his flights. This will call for more judges, of course, but will certainly expedite the flying.

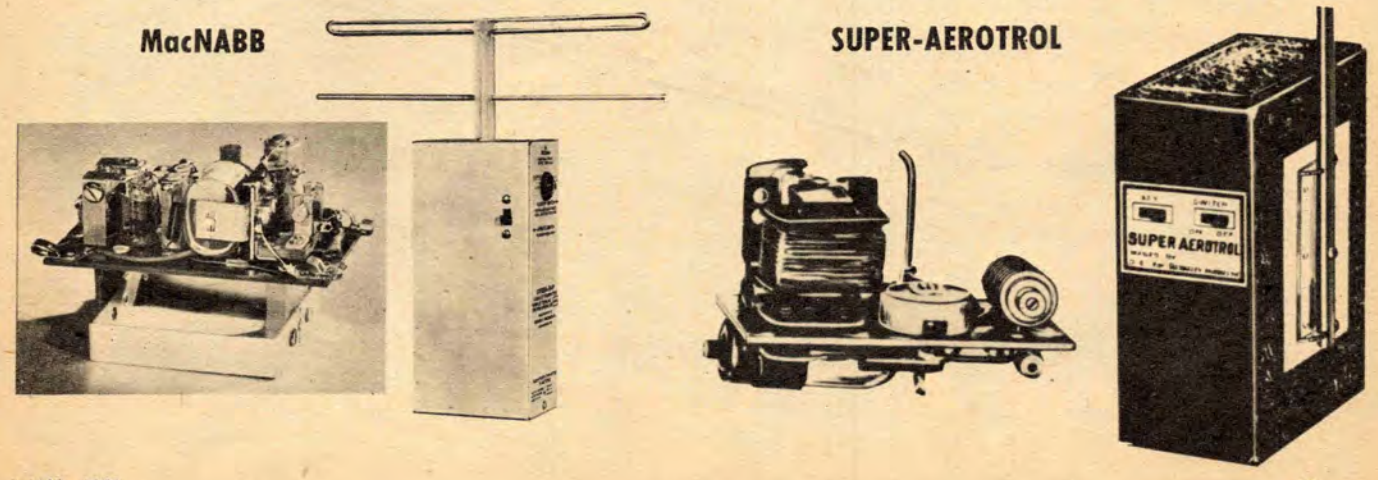
Now let's see what R/C equipment can be purchased today by those who do not wish to design or build their own. Up until a year ago, receivers using the RK61 tube were by far the most numerous, mainly because they are simple and several makers were selling them. This tube was designed expressly for R/C purposes by Raytheon; the first model was the RK62, which came out in 1938 and shortly thereafter a concern known as Radio Control Headquarters was formed to market RK62 receivers and associated equipment.

RCH, as this firm soon came to be known, sold this apparatus right up to the time we entered the war and all amateur radio operation was prohibited. Jim Walker used RCH equipment in his 1941 Nationals winner. Following the war, RCH resumed sale of the same popular line. Several years later, following the growing trend toward smaller planes and lighter radio gear, the receiver was reduced in size and a new lightweight escapement was added to the line.

The RK61 receiver shown weighs 3½ oz., and is 3½" x 1⅜" x 2" overall; the escapement weighs 1 oz., The RCH line includes motor-driven actuators, sequence solenoids, rubber-powered selectors and so on. Though kits were previously offered for all items in the line, this concern now devotes itself principally to sale of ready-to-use apparatus. However, instruction booklets are available which give details and working drawings of all items in the extensive RCH line. Much of this concern's present output is of the new lightweight line pictured here.

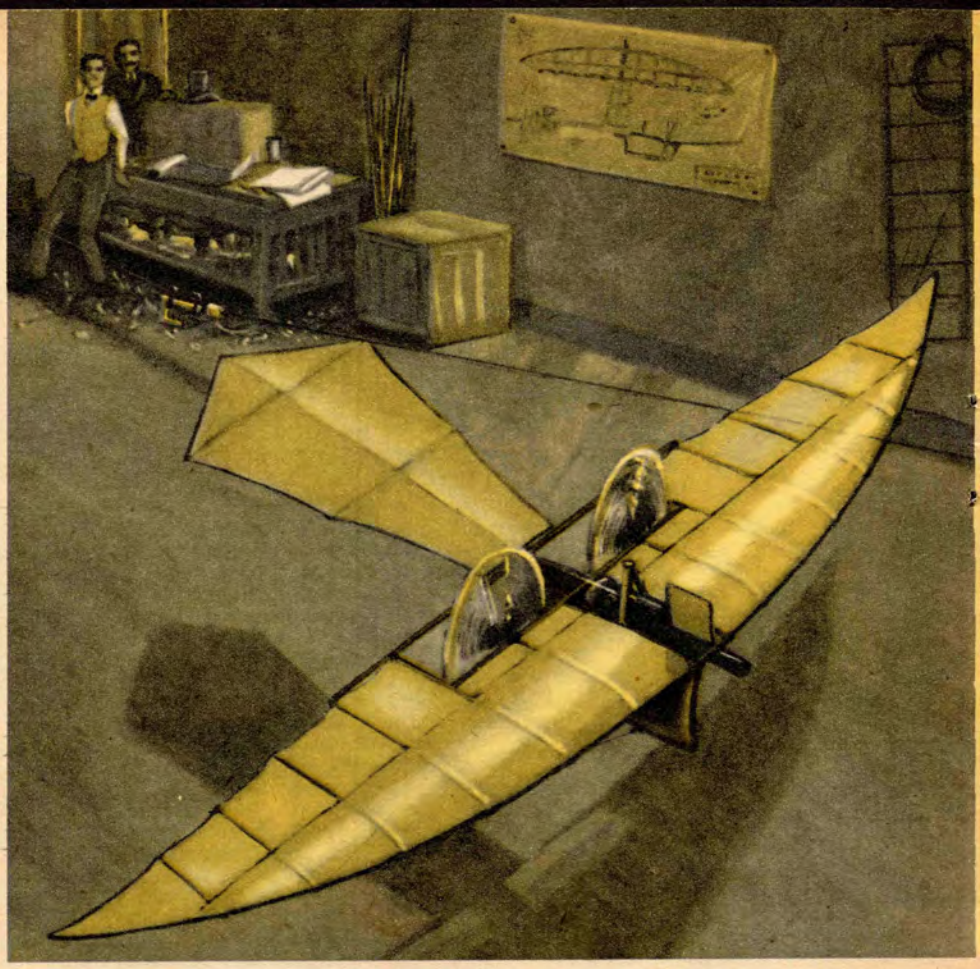
The standard RCH transmitter is fitted in a metal case 2" x 3" x 6" and is furnished with antenna, power cable, and a key or operating button on a long cord. A 3A5 tube is standard, though this transmitter can also be furnished with a high-voltage vibrator power supply and 6N7 tube, to work from a 6V storage battery. (*Continued on page* 52)

MacNABB **SUPER-AEROTROL**



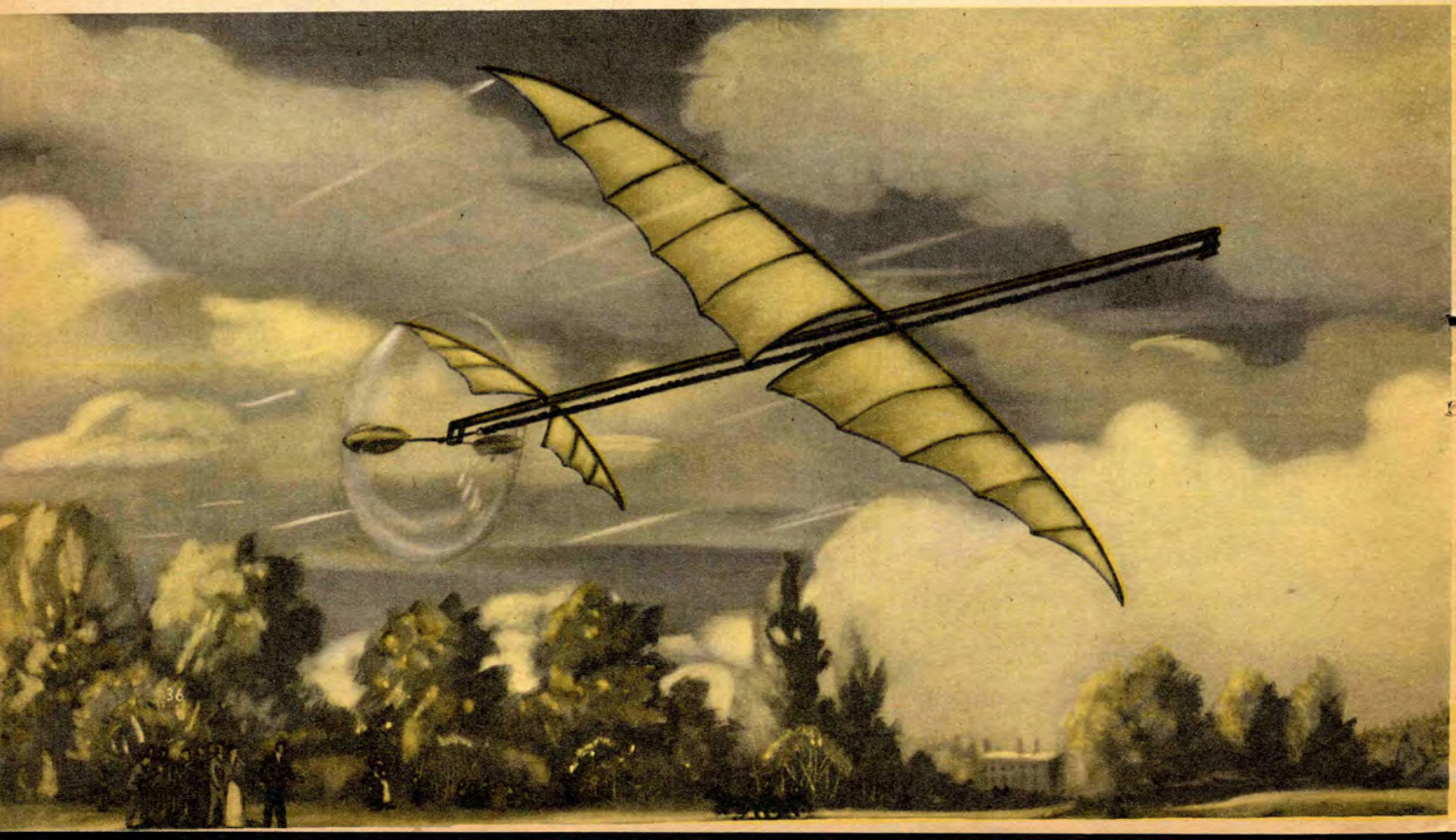
The Miraculous Models

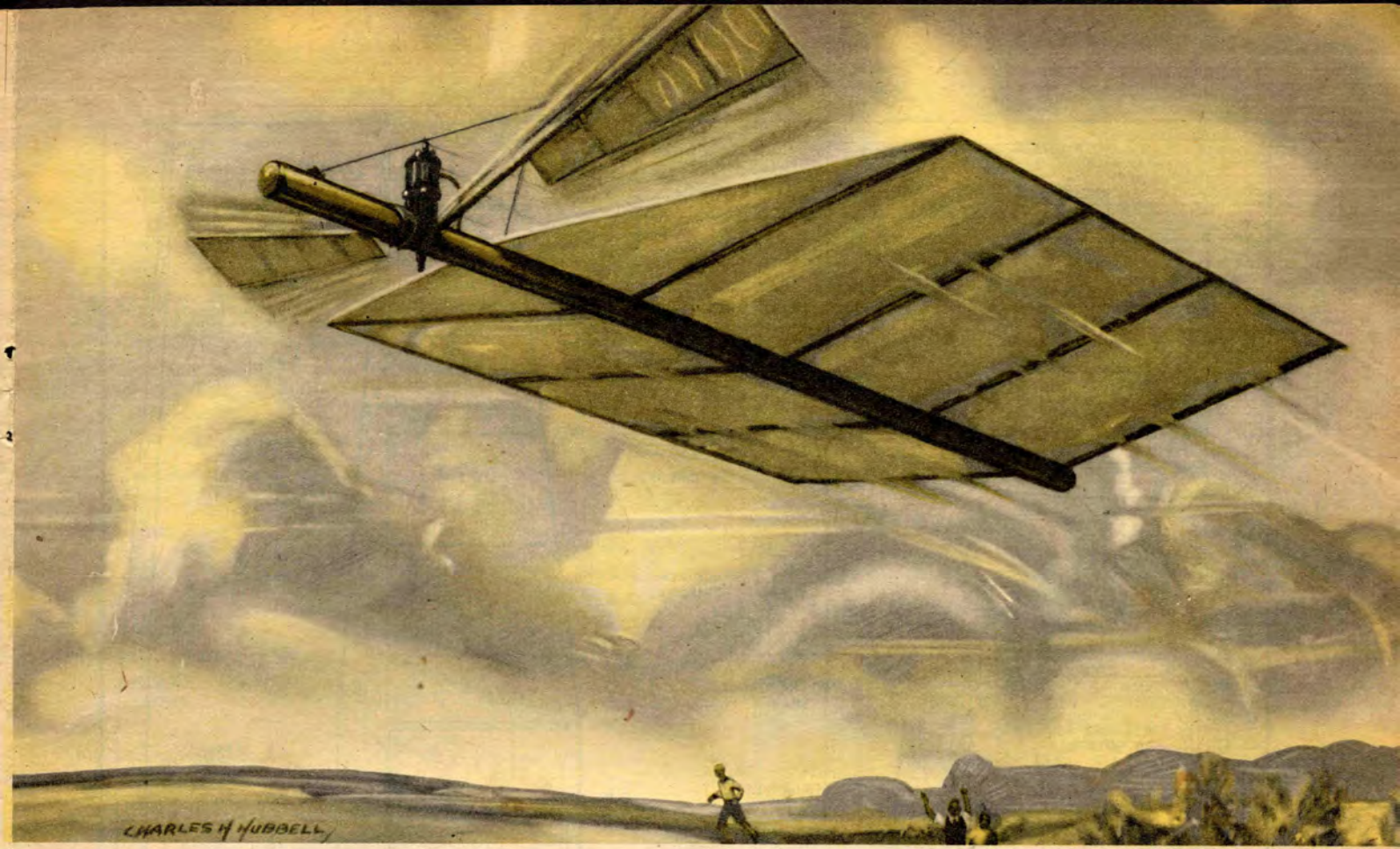
There's no chicken-egg versus egg-chicken controversy about aviation—models preceded man-carrying aircraft. Drawings by Charles Hubbell from the Thompson Products aeronautical collection



Stringfellow's Steam Model . . . 1848. John Stringfellow began his active aeronautical career at Chard, England, in 1842, as an associate of Henson. He designed and built this steam-powered monoplane of approx. 10 ft. wingspan, 9 lbs. wt. Launched in factory room, its 40-yd. flights were first recorded successful ones by mechanical power.

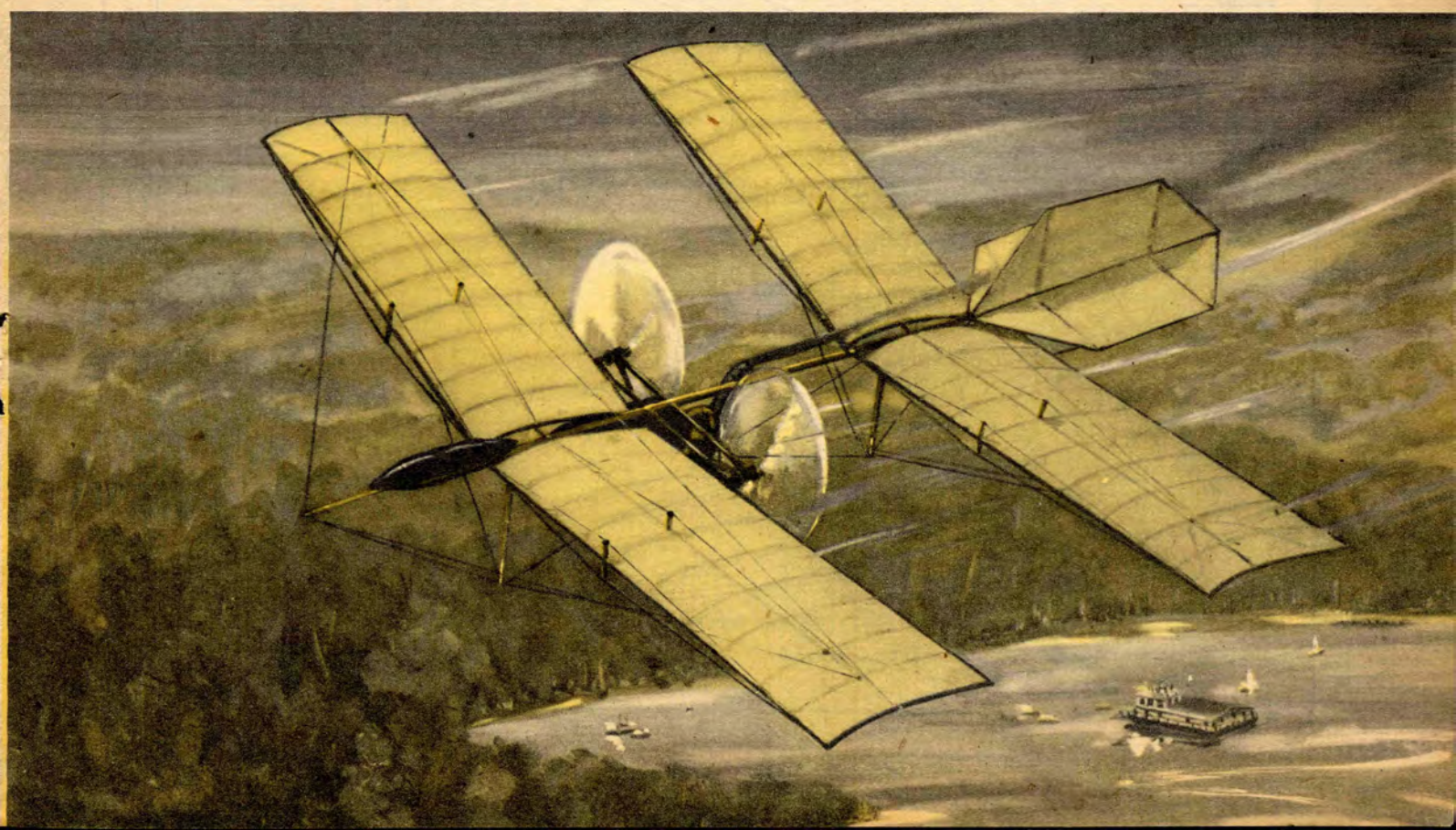
Penaud's Rubber Powered Model . . . 1871. The son of a French admiral, Alphonse Penaud acquired an excellent engineering education, then turned his talents toward the solution of the problem of flight. He invented the rubber-band motor as power for model aircraft. Patents granted him in 1876 cover an astounding number of features popular in modern aircraft. In 1871 Penaud built his first flying model, which he called the "Planaphore." With it, he achieved creditable flights of nearly 200 feet.

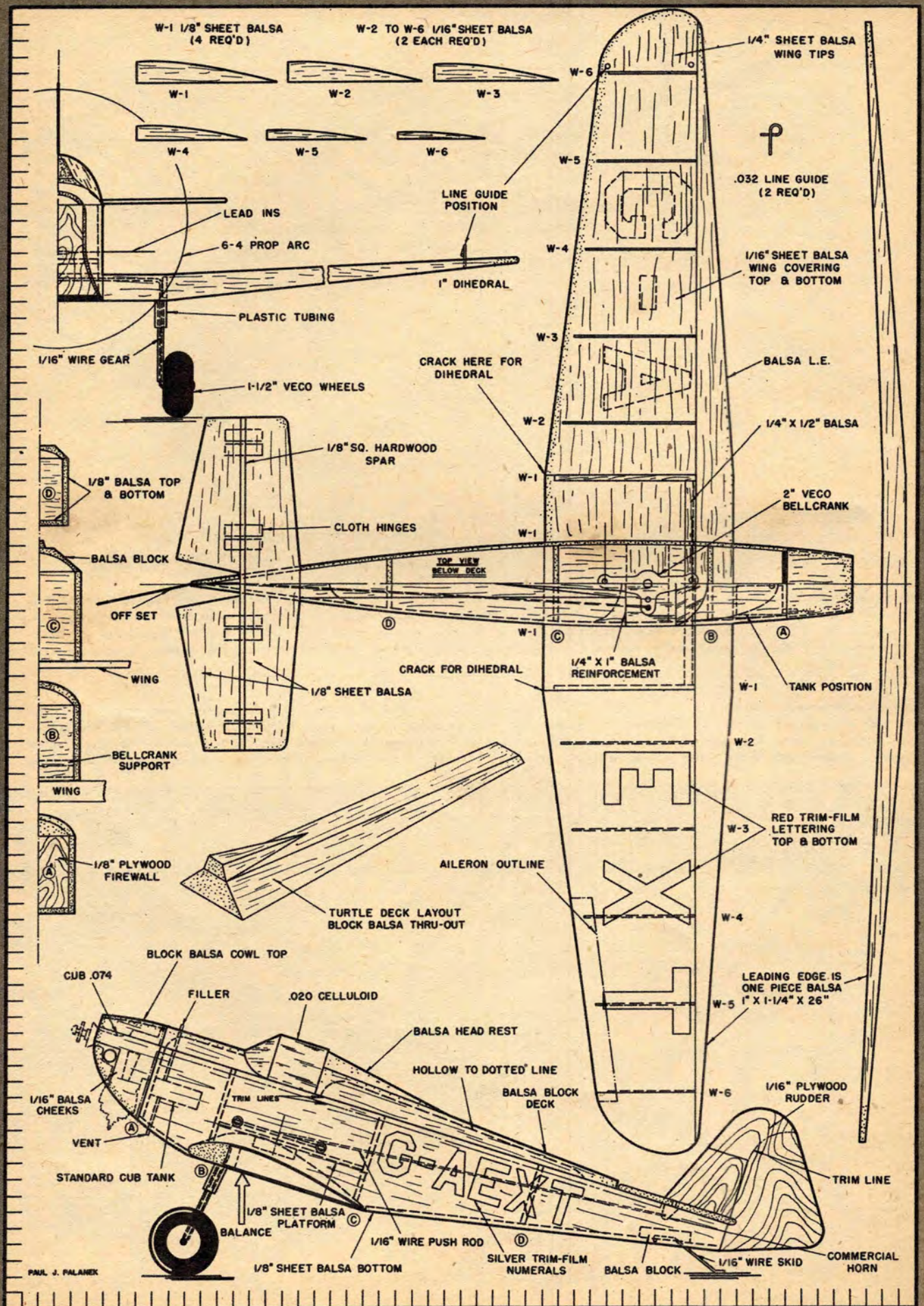




Hargrave, Australian Genius . . . 1892. Lawrence Hargrave of Sydney, Australia, began experiments with models in 1884. His investigations extended to almost every phase of mechanical flight and included the study of flapping wings as a means of propulsion. Among his 50 models was this which flew successfully, using a flapping wing propeller, actuated by a small compressed air motor. His development of the boxkite as a successful man-carrying vehicle had a great influence on the design of early aircraft.

Langley's Successful "Aerodrome" . . . 1896. Prof. Samuel P. Langley had a distinguished career and won many honors for scientific achievement. In 1891 he published his first report on the aeronautical experiments he had conducted. In 1896 two models were tried and one of them proved very successful. It made several flights over the Potomac River near Quantico, Va. The greatest distance covered was about 4,200 feet at a speed of about 30 mph. A man-carrying replica was wrecked during the launching.




W-1 1/8" SHEET BALSA (4 REQ'D)
W-2 TO W-6 1/16" SHEET BALSA (2 EACH REQ'D)
W-1
W-2
W-3
W-4
W-5
W-6
1/4" SHEET BALSA WING TIPS
.032 LINE GUIDE (2 REQ'D)
LINE GUIDE POSITION
LEAD INS
6-4 PROP ARC
1" DIHEDRAL
PLASTIC TUBING
1/16" WIRE GEAR
1-1/2" VECO WHEELS
1/16" SHEET BALSA WING COVERING TOP & BOTTOM
CRACK HERE FOR DIHEDRAL
BALSA L.E.
1/4" X 1/2" BALSA
1/8" SQ. HARDWOOD SPAR
1/8" BALSA TOP & BOTTOM
2" VECO BELLCRANK
CLOTH HINGES
BALSA BLOCK
TOP VIEW BELOW DECK
OFF SET
WING
1/4" X 1" BALSA REINFORCEMENT
CRACK FOR DIHEDRAL
TANK POSITION
1/8" SHEET BALSA
BELLCRANK SUPPORT
WING
RED TRIM-FILM LETTERING TOP & BOTTOM
1/8" PLYWOOD FIREWALL
AILERON OUTLINE
TURTLE DECK LAYOUT BLOCK BALSA THRU-OUT
BLOCK BALSA COWL TOP
CUB .074
FILLER
.020 CELLULOID
LEADING EDGE IS ONE PIECE BALSA 1" X 1-1/4" X 26"
BALSA HEAD REST
HOLLOW TO DOTTED LINE
1/16" BALSA CHEEKS
TRIM LINES
BALSA BLOCK DECK
1/16" PLYWOOD RUDDER
VENT
STANDARD CUB TANK
TRIM LINE
1/8" SHEET BALSA PLATFORM
BALANCE
1/16" WIRE PUSH ROD
SILVER TRIM-FILM NUMERALS
BALSA BLOCK
1/16" WIRE SKID
COMMERCIAL HORN
1/8" SHEET BALSA BOTTOM
PAUL J. PALANEK

Dart Kitten

You can look high and low but you'll have a tough time finding a scale model airplane more perfect for U/C flying than G-AEXT

By PAUL PALANEK

Author-designer Palanek, now 27, started modeling at 10 when he saw a friend with a slick miniature of the Winnie Mae. Paul did a lot of flying with members of the Brooklyn Skyscrapers. He was a crew chief on B-17 for AAF during World War II at Natal, Brazil. Now married, has son Ronald (3).

■ The *Dart Kitten* made its debut in England early in 1937. Designed by A. R. Weyl, with an eye for the average income buyer, this machine was powered with a French 24/27 hp Ava, flat-four two-stroke engine.

The second *Kitten* was decked out for flight in June of the same year. In this design the Ava was replaced by a 36 hp J.A.P., which increased its rate of climb and cruising speed. This airplane flew in and out of fields too small for a Puss Moth.

The overall span was 32 ft., length 21 ft., 9 in.; maximum speed was in the neighborhood of 95 mph and cruising at 83 mph. This machine was able to climb 600 feet per minute.

In scanning the plans you will note the simple construction. The fuselage is box shape, and the wings are sheet balsa both top and bottom. The color scheme is attractive: silver wings and elevators with red fuselage and silver trim. The wings carry red numerals and the fuselage silver.

Construction should start with the fuselage. The sides, bottom and formers B, C, and D are shaped from ⅛" sheet balsa. The lower portion of the fuselage sides are cut out to allow for the wing. The firewall, former A, is cut from ⅛" plywood. When the two sides and formers are assembled, a 2" Veco bellcrank is installed. A ⅛" hard sheet balsa platform supports the bellcrank. Two holes are drilled in the left side of the fuselage and in line with the bellcrank. The .032 lead-ins are slipped into these holes, and soldered to the bellcrank.

The pushrod is shaped from 1/16" wire and fastened to the bellcrank. Allow sufficient length for final fitting to the elevator assembly. The forward and rear decks are shaped from soft balsa blocks. The blocks are preshaped and then hollowed. When both blocks are completed, cement them in place. The headrest is also shaped from the soft balsa and cemented to the turtle deck.

The tail assembly is made from two types of material. The rudder is 1/16" plywood, the elevator and stab are ⅛" medium hard sheet balsa. Plywood was used for the rudder in place of balsa to cut down any possible damage resulting from nose-over landings. The plywood can take the pounding.

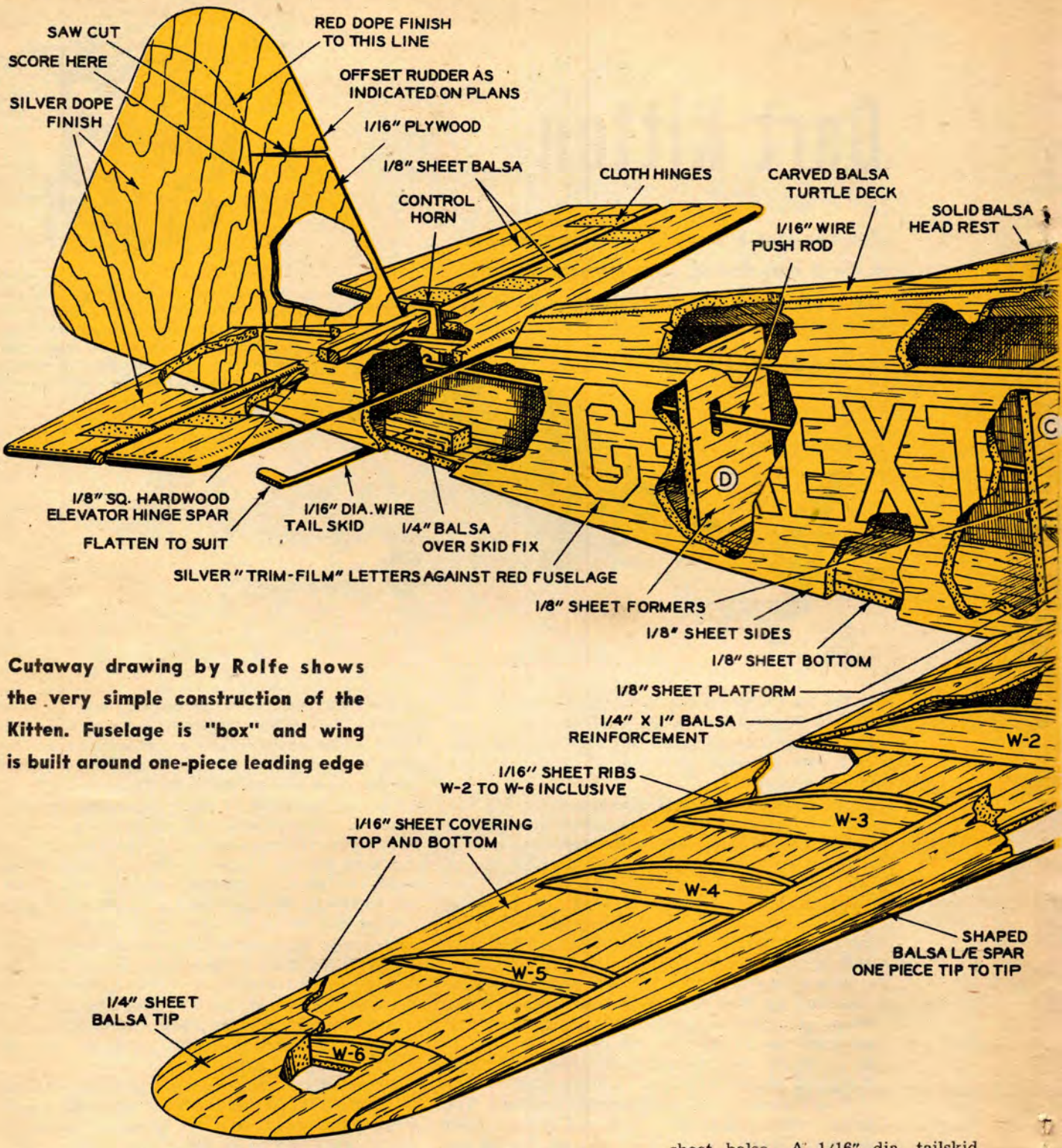
When the ⅛" sheet balsa stab and elevator are shaped, a ⅛" sq. piece of hardwood joins the elevator halves together. Cloth hinges are used to fasten the stab to the elevator. A horn is fastened to the elevator's hardwood spar. The elevator assembly is securely cemented in place. The loose end of the pushrod is now inserted and soldered to the horn.

Before securing the rudder in place, score a line on the right half along the hinge line with a razor blade and crack, to give the required rudder offset. Cement this break well.

The fuel tube of the standard Cub fuel tank runs through a hole drilled in the engine firewall. Plastic tubing ⅛" in dia. is used for both the vent and filler.

The .074 Cub or similar engine should be mounted temporarily with wood screws to provide a guide while fitting the sheet balsa cowl. The top portion of the cowl is carved from soft block, the sides are made from 1/16" sheet balsa. All three units are cemented in place and shaped to the contours shown. The engine is then removed.

Final stage in construction is the wing, which is



Cutaway drawing by Rolfe shows the very simple construction of the Kitten. Fuselage is "box" and wing is built around one-piece leading edge

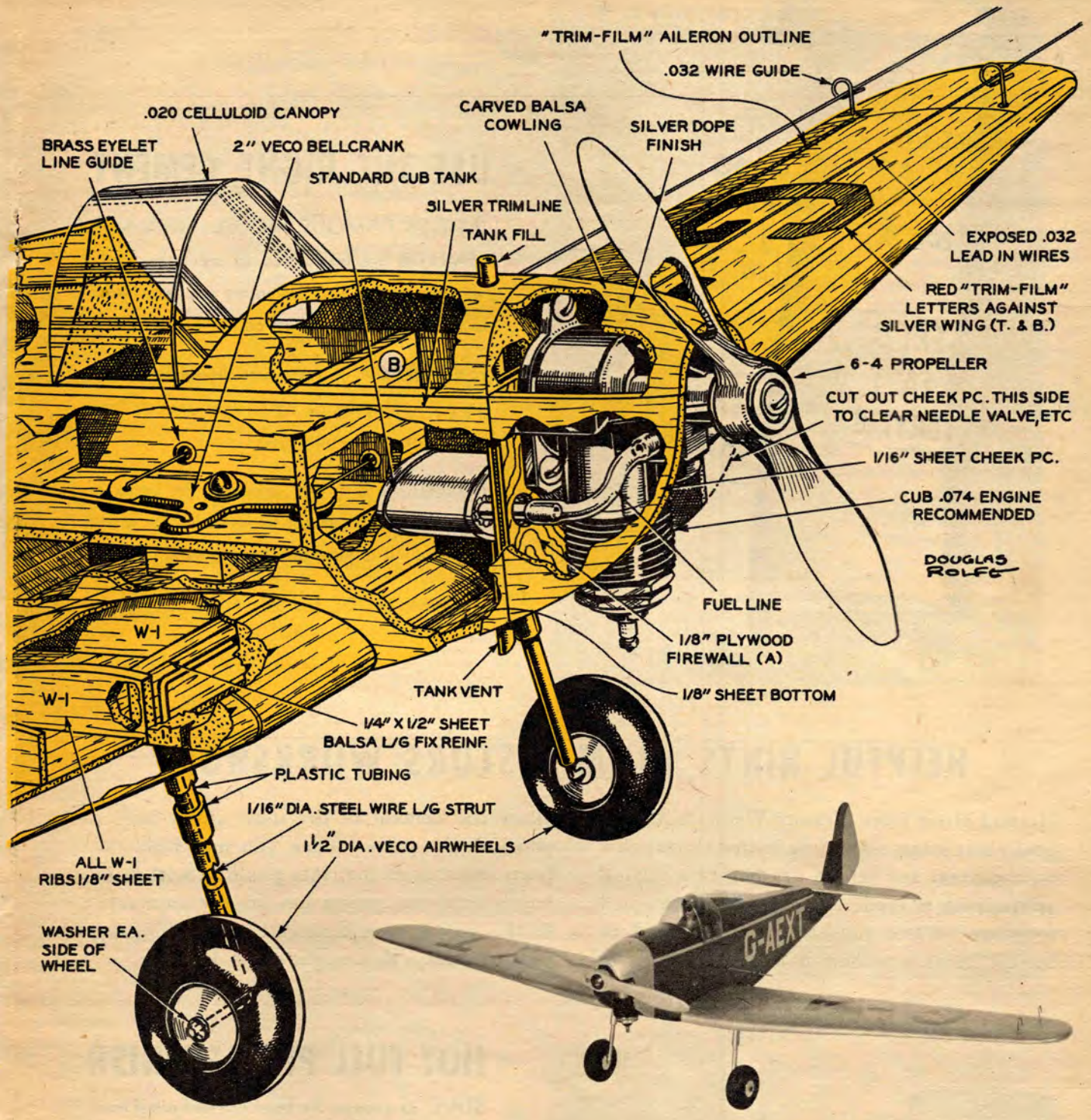
built in one piece. The leading edge is shaped from a single piece of balsa; note that the dihedral angle is built directly into this member. The center section ribs, W-1, are shaped from ⅛" sheet balsa—four are required. Ribs W-2 through W-6 are shaped from 1/16" sheet—two each of these are required.

The landing gear is installed before the upper half of the wing is sheeted over. The gear is shaped from 1/16" dia. wire, and is cemented to the rear of the leading edge, between the extreme W-1 ribs. A piece of balsa ¼" x ½" is used to reinforce the gear wire.

The upper half of the wing is then covered with sheet balsa. The wingtips are made from ¼" sheet balsa. When the wing is completely dried, sand to airfoil shape and apply two coats of clear dope. The wing is then cemented to the fuselage. As the cemented wing dries follow through with the second coating of cement. The lower portion of the fuselage is covered over with ⅛" sheet balsa. A 1/16" dia. tailskid wire is fastened to the tail end of the airplane.

Prior to finishing the model, using fine sandpaper, gently sand all surfaces and apply three coats of clear dope. A light sanding between each application will help the finish.

The color scheme calls for the use of red and silver dope. The fuselage is red with silver trim, the wing and tail are silver with red trim. All lettering was cut from silver and red Trim-Film. For a neat and glossy finish apply at least three coats of colored dope with a wet sanding



after the first two applications. A dummy sport pilot is mounted in the cockpit. The pilot's enclosure is made from .020 celluloid. Plastic tubing is used to give the landing gear a shock-absorber appearance. The wheels are 1½" dia. soldered to the gear. The wingtip line guides are formed from .032" wire, two being required. Cement the guides as shown on the upper surface of the left wing tip.

The entire ship is now given two coats of fuel proofer. Be liberal with the engine compartment. The engine is fastened in place and a ⅛" fuel line connected. With a 6/4 prop mounted and a full tank of fuel, the *Kitten* should balance as indicated on the drawing. If not, lead weight can be used to bring the model to proper balance.

The model was flown on 45 ft. lines with little after-trimming required.

The box on the right lists the materials required; use balsa unless otherwise specified.

(Full-size construction plans for building the *Kitten* are available from Air Trails on Plan #552 along with the Capt. Page Curtiss Navy Racer and the Galloping Comedian.)

1 pc. ⅛" x 3" x 36" (medium), fuselage, stabilizer, formers, elevators, ribs. 3 pcs. 1/16" x 3" x 36" (medium), wing covering top and bottom, cowl cheeks, wing ribs. 1 pc. ¾" x 1½" x 18" (soft), turtle deck, cowl top. 1 pc. 1/16" x 3" x 4" (ply), rudder. 1 pc. 1" x 1¼" x 26" (medium), wing leading edge. 1 pc. ¼" x 2" x 6" (medium), wingtips. 1 pc. ⅛" sq. x 10" (hardwood), elevator spar. 1 pc. ¼" x ½" x 10" (medium), gear reinforcement. 1 pc. ⅛" x 2" x 6" (hard), bellcrank platform. 1 pc. ½" x 1" x 3" (medium), platform reinforcement. 1 pc. ½" x ½" x 3" (soft), headrest. 1 pc. ¼" x ¼" x 1" (medium), tailskid reinforcement.

Cement; dopes; ⅛" plywood firewall; wood screws; 1/16" dia. wire; 1/32" dia. wire; cloth hinges; Trim-Film; fuel proofer; plastic tubing; 1 pr. of 1½" dia. Veco wheels; 2" Veco bellcrank; horn; .074 Cub engine or similar; 6/4" prop; .020" celluloid; dummy pilot.

USE THE RIGHT CEMENT

TESTORS FAMOUS MODEL AIRPLANE CEMENTS are formulated to meet the exact requirements of the cementing job you want to do. Keep both of them on hand at all times!

FORMULA A is *extra fast drying* for quick, easy construction of lightweight models and for on-the-spot repairs.

FORMULA B is the *strongest* for balsa or hardwood . . . for metal to metal . . . for metal to wood. It is your best bet for general work.

Available in 10c and 25c tubes.

HELPFUL HINTS FROM TESTORS WORKSHOP

Helpful Hints from Testors Workshop: End grain butt joints should be coated thoroughly with cement and left to dry before a second application is made and the parts cemented together. When you cement small, hard-to-handle parts together, it is a good idea to allow the cement to dry until sticky before you join the parts. Then you may hold the parts together in the right position with your hands until the cement has dried completely. In this way, it saves time and you avoid using pins or clamps that might cause damage.

HOT FUEL PROOF FINISH

STA is, as always, the finest hot fuel proof finish that you can use. STA will effectively resist all hot fuels on the market today, including those containing high concentrations of such ingredients as nitro-methane, methanol, castor oil, etc. Available in 12 colors, Clear, and Sealer in 15c and 50c jars; also STA Thinner (15c and 35c).

TESTOR CHEMICAL COMI

FOR A REAL SMOOTH FINISHING JOB

For a real smooth finishing job, apply several coats of TESTORS SANDING SEALER — don't be stingy with it — and allow 15 minutes dry-time between coats. As you sand down each coat, you will see how the grain of the wood gradually is filled out, until you have a perfectly smooth surface for the Dope application. Thin the Sanding Sealer a little with the corresponding TESTORS DOPE THINNER and for sanding, use TESTORS No. 320 Coarse Finishing Paper which you find in the TESTORS FINISHING PAPER 10c assortment. Don't try to remove stray hairs left by the brush until the Sanding Sealer is dry. Remember: a thorough Sanding Sealer treatment is necessary for perfect finishing. You cannot make up for it later by applying extra coats of Dope. For brushing . . . TESTORS DOPE should be thinned a little with Testors Dope Thinner. For spraying . . . use Dope and Thinner half and half. Mix thoroughly! *Never* attempt to "doctor" Testors Dope. Do not add castor oil or other chemicals! Sand only lightly between coats . . . you will find Testors Dope very easy to work with. It has been carefully formulated after extensive laboratory research and testing to give you truly superior quality, most effective results. Available in a full range of colors — including official Army-Navy aircraft colors—in sizes from 15c jars to gallons.

MPANY • ROCKFORD, ILLINOIS

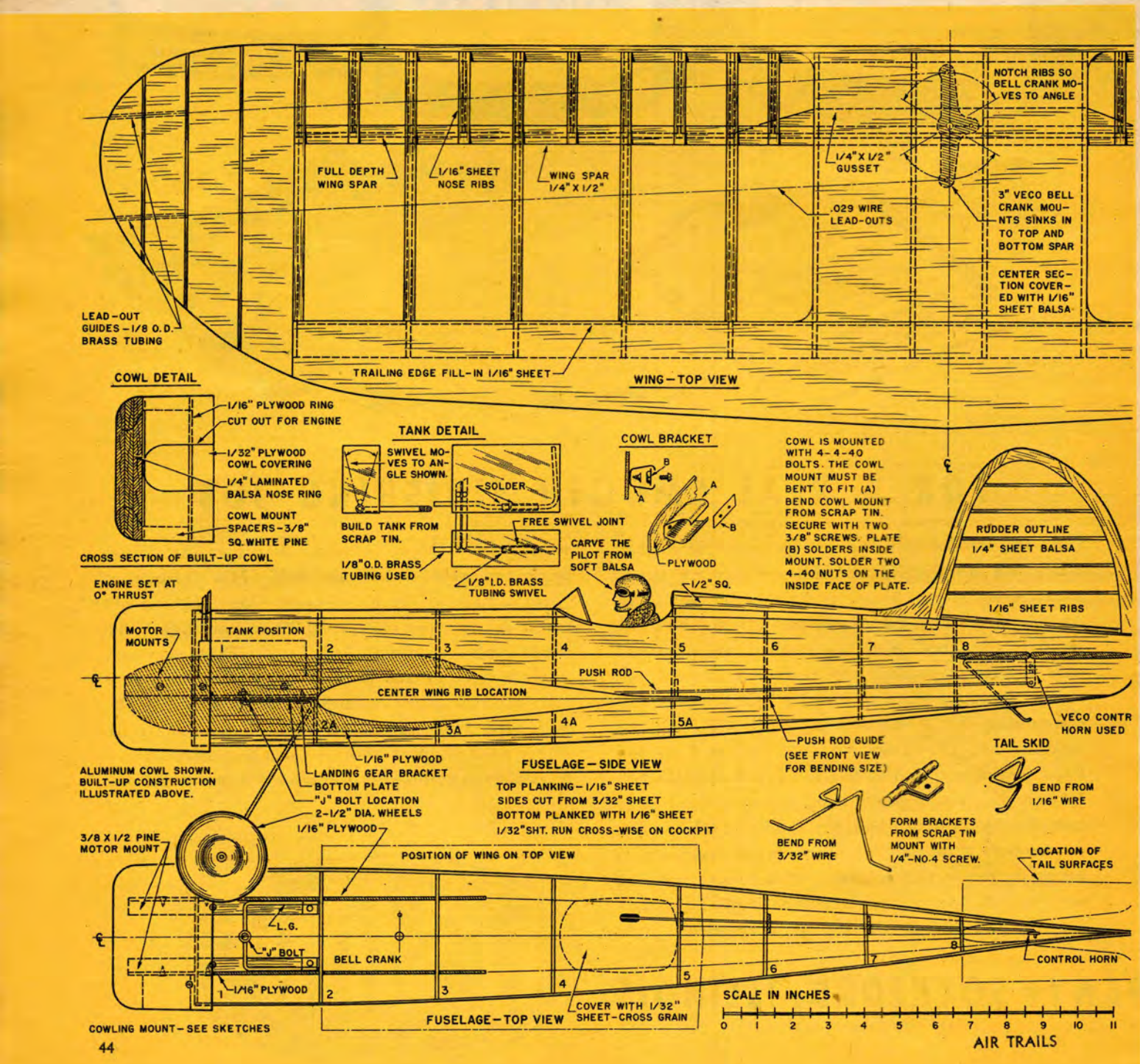
TESTORS

Red's Rambunctious Beauty Galloping Stunter Comedian

By HAROLD REINHARDT

■ *Editor's Note*: One of the most quietly competent, self-effacing modelplane experts flying in competition circles today is Harold "Red" Reinhardt of Elizabeth, N. J., an outstanding model designer and stunt contender. Red is the type of fellow who replies "Okay, I guess" to a query like, "How did you make out at the Whatsis model meet?" The fact that he may have won first place by a wide margin and a trip to Detroit seems incidental.

You ask Harold if he has any new models and he's apt to say, "A couple." At the next club meeting all you seem to hear is wondrous comments about Reinhardt's new stunt designs. We haven't been able to figure out whether Red is an atomic-age Cal Coolidge


NOTCH RIBS SO BELL CRANK MOVES TO ANGLE
FULL DEPTH WING SPAR
1/16" SHEET NOSE RIBS
WING SPAR 1/4" X 1/2"
1/4" X 1/2" GUSSET
.029 WIRE LEAD-OUTS
3" VECO BELL CRANK MOUNTS SINKS IN TO TOP AND BOTTOM SPAR
CENTER SECTION COVERED WITH 1/16" SHEET BALSA
LEAD-OUT GUIDES - 1/8 O.D. BRASS TUBING
TRAILING EDGE FILL-IN 1/16" SHEET
WING - TOP VIEW
COWL DETAIL
1/16" PLYWOOD RING
CUT OUT FOR ENGINE
1/32" PLYWOOD COWL COVERING
1/4" LAMINATED BALSA NOSE RING
COWL MOUNT SPACERS - 3/8" SQ. WHITE PINE
CROSS SECTION OF BUILT-UP COWL
TANK DETAIL
SWIVEL MOVES TO ANGLE SHOWN.
SOLDER
BUILD TANK FROM SCRAP TIN.
FREE SWIVEL JOINT
1/8" O.D. BRASS TUBING USED
1/8" I.D. BRASS TUBING SWIVEL
COWL BRACKET
PLYWOOD
CARVE THE PILOT FROM SOFT BALSA
1/2" SQ.
COWL IS MOUNTED WITH 4-4-40 BOLTS. THE COWL MOUNT MUST BE BENT TO FIT (A) BEND COWL MOUNT FROM SCRAP TIN. SECURE WITH TWO 3/8" SCREWS. PLATE (B) SOLDERS INSIDE MOUNT. SOLDER TWO 4-40 NUTS ON THE INSIDE FACE OF PLATE.
RUDDER OUTLINE
1/4" SHEET BALSA
1/16" SHEET RIBS
ENGINE SET AT 0° THRUST
MOTOR MOUNTS
TANK POSITION
PUSH ROD
CENTER WING RIB LOCATION
VECO CONTR HORN USED
PUSH ROD GUIDE (SEE FRONT VIEW FOR BENDING SIZE)
TAIL SKID
BEND FROM 1/16" WIRE
ALUMINUM COWL SHOWN. BUILT-UP CONSTRUCTION ILLUSTRATED ABOVE.
1/16" PLYWOOD
LANDING GEAR BRACKET
BOTTOM PLATE
"J" BOLT LOCATION
2-1/2" DIA. WHEELS
FUSELAGE - SIDE VIEW
TOP PLANKING - 1/16" SHEET
SIDES CUT FROM 3/32" SHEET
BOTTOM PLANKED WITH 1/16" SHEET
1/32" SHT. RUN CROSS-WISE ON COCKPIT
BEND FROM 3/32" WIRE
FORM BRACKETS FROM SCRAP TIN MOUNT WITH 1/4"-NO-4 SCREW.
3/8 X 1/2 PINE MOTOR MOUNT
POSITION OF WING ON TOP VIEW
LOCATION OF TAIL SURFACES
L.G.
"J" BOLT
BELL CRANK
1/16" PLYWOOD
CONTROL HORN
COVER WITH 1/32" SHEET-CROSS GRAIN
FUSELAGE - TOP VIEW
SCALE IN INCHES
0 1 2 3 4 5 6 7 8 9 10 11
COWLING MOUNT - SEE SKETCHES

or is the most modest modeler on the face of the earth.

In either case, it's always necessary to track Reinhardt down in order to get any information on his designs. In 1950 Red won the Plymouth International stunt competition and the Air Trails' perpetual stunt trophy. Last year Red tried to make it two in a row, but missed out, blaming not the contest nor its officials, but mostly himself. From the standpoint of his fellow contestants, Red's slick little orange and white entry was tops in appearance and capable of running through the full stunt pattern with obvious ease.

As we do in many, many cases, the editors picked this model for presentation here not only because they like it and considered it of special significance,

Red and his G.C. job. This photo was taken at the '51 Plymouth International contest in Detroit. Surprisingly great interest in model was displayed by Red's competitors. This model was built specially for the "finals," hence its clean lines, outstanding finish.

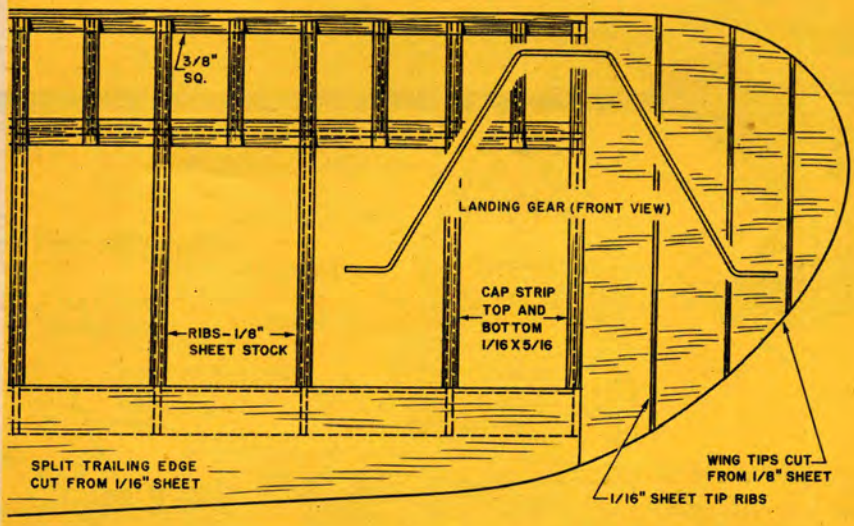
but because many of the modelers competing in the big Plymouth battle paid it lavish compliments.

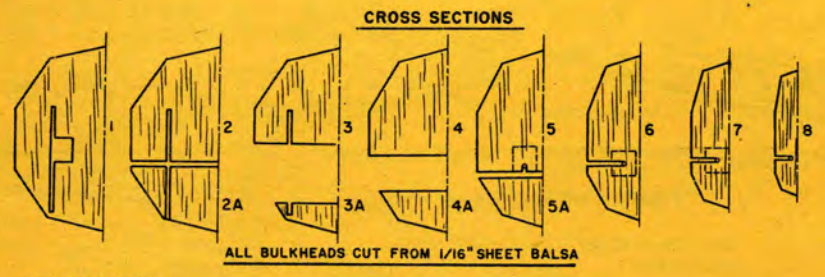
Here is Red's own story of his *Galloping Comedian:*

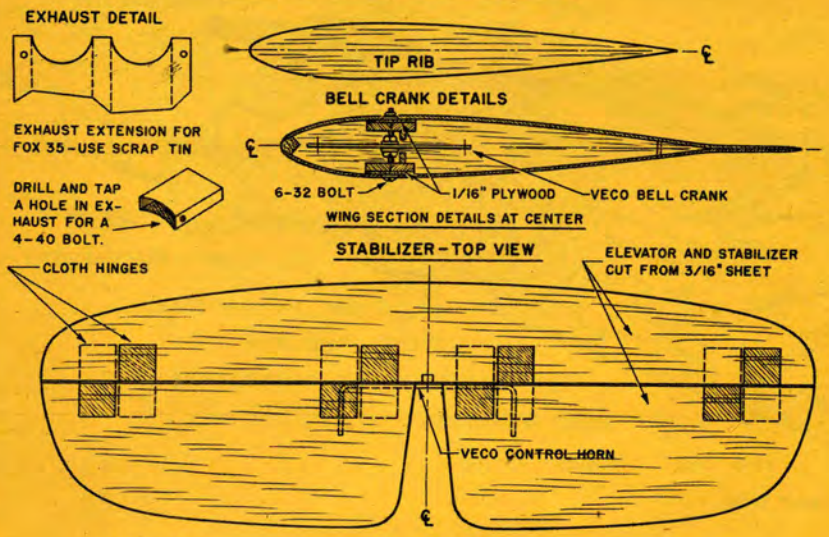
It seems that the trend in stunt flying is toward realistic, good looking stunt ships. This one was designed to resemble the racing ships of the prewar days. It handles very nicely, and does a good stunt pattern. The original was powered by a Fox .35, but it will take any .29 to .35 with no trouble.

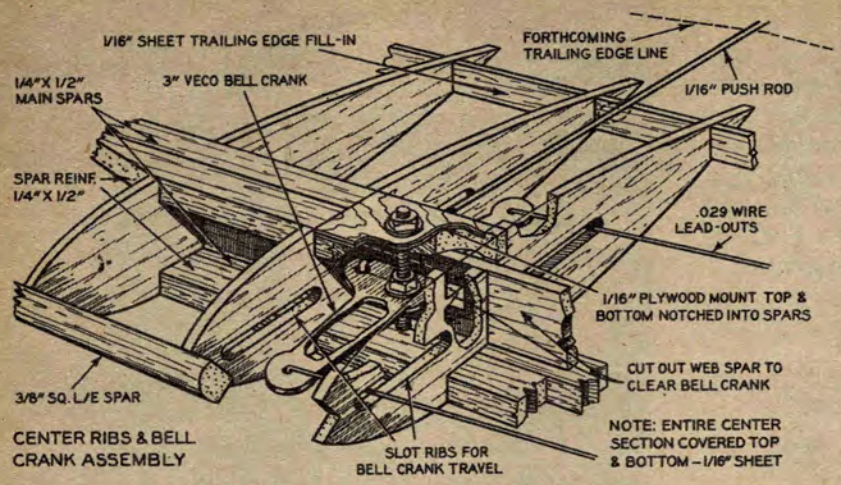
Start by building the wing, since the rest of the airplane is built around it. Make a tin pattern of the wing rib section, and make all the ribs and nose ribs by placing it on sheet wood and cutting around it with a knife or razor blade. When this is done, stack all the ribs together with pins and notch out for the leading edge.

Cut the notches for the spars, being sure to allow for the full-depth web spar plus cap spar that will separate the front and back halves of the ribs. Then cut the ribs in half with a coping saw at the point where the full-depth spar will be placed. Cut the 5/8" x 1/8" x 36" full-depth spar from hard sheet. Glue the front halves of the ribs and the nose ribs in position, then add the 3/8" square leading edge. Add the back halves of the ribs, and glue on the bottom half of the split trailing edge. Cut the trailing edge fill-ins and glue them in place. Sand them off flush


3/8" SQ.
LANDING GEAR (FRONT VIEW)
CAP STRIP TOP AND BOTTOM 1/16 X 5/16
RIBS-1/8" SHEET STOCK
SPLIT TRAILING EDGE CUT FROM 1/16" SHEET
WING TIPS CUT FROM 1/8" SHEET
1/16" SHEET TIP RIBS






1/16" SHEET TRAILING EDGE FILL-IN
FORTHCOMING TRAILING EDGE LINE
1/4"X 1/2" MAIN SPARS
3" VECO BELL CRANK
1/16" PUSH ROD
SPAR REINF 1/4" X 1/2"
.029 WIRE LEAD-OUTS
1/16" PLYWOOD MOUNT TOP & BOTTOM NOTCHED INTO SPARS
CUT OUT WEB SPAR TO CLEAR BELL CRANK
3/8" SQ. L/E SPAR
NOTE: ENTIRE CENTER SECTION COVERED TOP & BOTTOM – 1/16" SHEET
SLOT RIBS FOR BELL CRANK TRAVEL

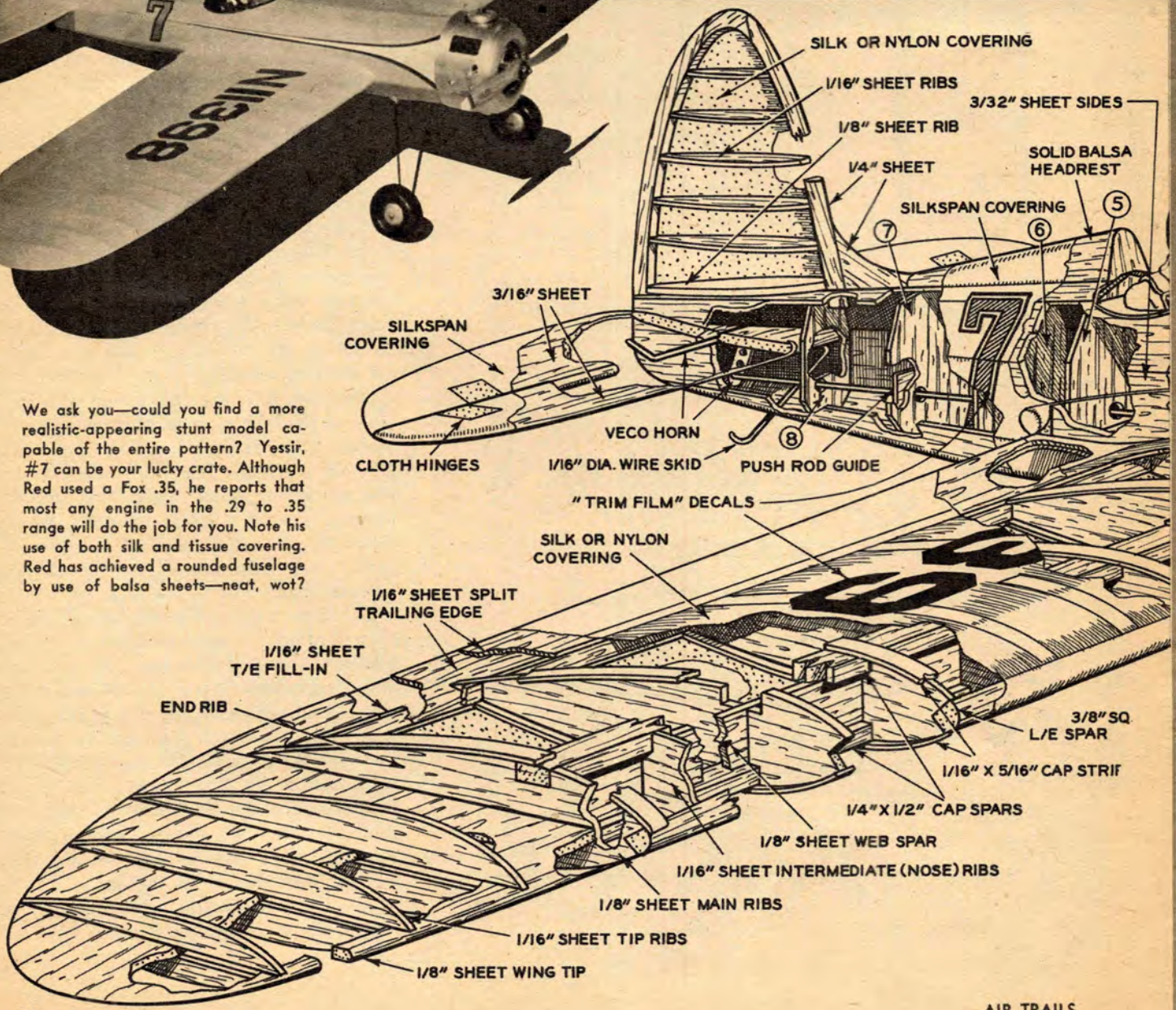
CENTER RIBS & BELL CRANK ASSEMBLY

with the ribs. Glue the main spars and the center reinforcement spars in position. All the main spars are rock-hard ¼" x ½" balsa.

Notch out the spars for the bellcrank mounts. Cut the bellcrank mounts from 1/16" plywood and glue them in place. When dry, drill the hole for the bellcrank bolt, and install the control system as shown. The pushrod goes through a hole in the top half of the split trailing edge, so slide the pushrod through the hole, and glue in place. Make sure the bellcrank swings to the angles shown, then plank the center section with 1/16" sheeting, and add the 1/16" x 5/16" cap strips. Cut the wingtips as indicated, and glue in place. Cut out six more ribs with the tin pattern and split them lengthwise. Glue in position on the wing, and when everything is dry, sand the entire wing smooth.

The wing is then covered with

We ask you—could you find a more realistic-appearing stunt model capable of the entire pattern? Yessir, #7 can be your lucky crate. Although Red used a Fox .35, he reports that most any engine in the .29 to .35 range will do the job for you. Note his use of both silk and tissue covering. Red has achieved a rounded fuselage by use of balsa sheets—neat, wot?



silk or nylon. This is important. Paper will make the wing too weak. Next, apply one coat of clear dope. Now the wing is finished and you have a base to build the plane on.

Cut the motor mount supports from 1/16" plywood. Obtain ⅜" x ½" maple motor mounts. Glue them in place on the motor mount supports, and then add the ¼", #3 wood screws. Glue these parts in place on the wing; be sure to line them up accurately. Then glue the 1/16" plywood bottom plate in place, and add the ¼", #3 wood screws. Then drill holes for the engine used.

Next, draw a center line on the top and bottom of the wing. Cut out all the fuselage formers and pushrod guides as shown. Take all the formers that will be on top and bottom of the wing, and glue them in place, being careful to line them up on the center line. Cut the 3/32" sides from medium balsa and glue them on top of the wing to the formers. Then, starting at the back of the wing, add a former, slide a guide over the pushrod and glue it to the former, add another former and another guide, and so on back.

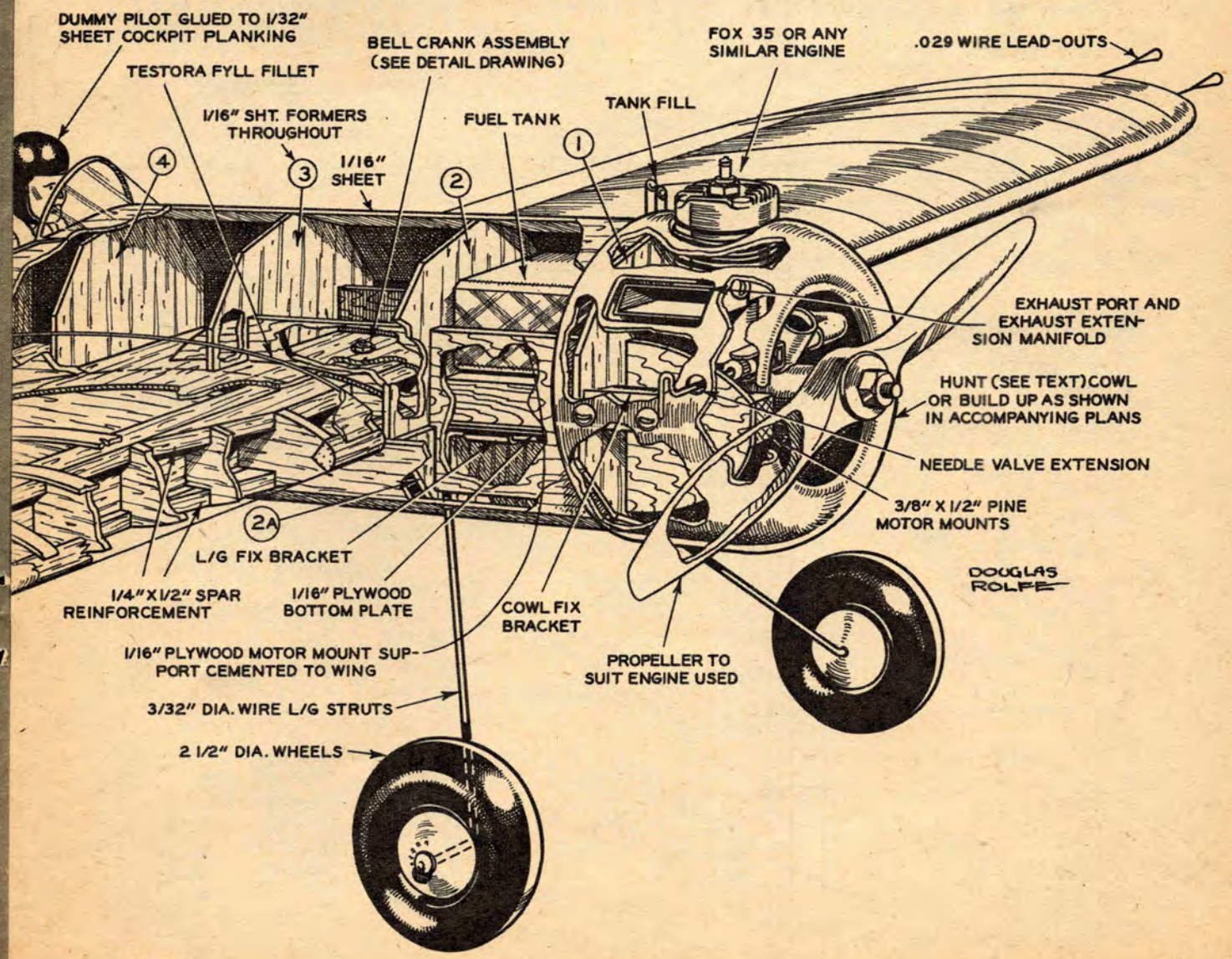
Cut the stabilizer and elevators from medium 3/16" balsa. Put the Veco control horn in place and assemble with the cloth hinges. Mount the tail assembly on the fuselage, and hook up the controls. The elevators should not travel more than 45 deg. up and down, or less than 35 deg. Bend the landing gear and the tailskid and attach as shown. Make up the tank as shown, or purchase a suitable one and glue it on.

Plank the rest of the fuselage, and when dry, sand well. Make up the rudders by building the outline of ¼" sheet and cutting a strip of 1/16" x ½" balsa to the size of the ribs. Glue them in place and sand the rudder to a symmetrical shape. Glue in place on the fuselage. Cut out the cockpit opening and plank with 1/32" sheeting. Add the headrest, and sand well. Add wing and stab fillets with filler material.

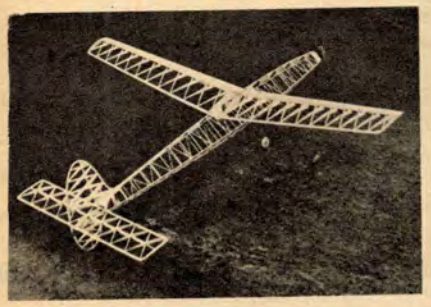
Cover the entire fuselage with Silkspan. This is necessary for strength. Cover the rudder with silk, and the stabilizer and elevators with Silkspan. Apply five coats of clear dope to the entire ship. Then color-dope to your liking, and finally apply two coats of hot fuel proofer.

Make up the cowling brackets as shown, and mount the cowling. The cowling can be purchased from Hunt Engineering Co. or built up as indicated. Make up an exhaust extension as shown, and mount it on your engine. The extension shown is for a Fox .35. Add an extension to the needle valve if needed. Fly the ship on 65 ft., .010 lines.

Doug Rolfe's eyes really lit up when he saw this one—"Now there's a real ship!" he exclaimed


DUMMY PILOT GLUED TO 1/32" SHEET COCKPIT PLANKING
TESTORA FYLL FILLET
BELL CRANK ASSEMBLY (SEE DETAIL DRAWING)
FOX 35 OR ANY SIMILAR ENGINE
.029 WIRE LEAD-OUTS
1/16" SHT. FORMERS THROUGHOUT
FUEL TANK
TANK FILL
1/16" SHEET
4
3
2
1
EXHAUST PORT AND EXHAUST EXTENSION MANIFOLD
HUNT (SEE TEXT) COWL OR BUILD UP AS SHOWN IN ACCOMPANYING PLANS
NEEDLE VALVE EXTENSION
3/8" X 1/2" PINE MOTOR MOUNTS
2A
L/G FIX BRACKET
DOUGLAS ROLFE
1/4" X 1/2" SPAR REINFORCEMENT
1/16" PLYWOOD BOTTOM PLATE
COWL FIX BRACKET
1/16" PLYWOOD MOTOR MOUNT SUPPORT CEMENTED TO WING
PROPELLER TO SUIT ENGINE USED
3/32" DIA. WIRE L/G STRUTS
2 1/2" DIA. WHEELS

Author Warring with his geared Wakefield job which featured a geodetic tail. Its success led to 100% geodetic model (below).



Three and one-quarter ounce Wakefield with geodetic wings, tail and fin. Author won 1951 rubber competition at British National meet.

By RON WARRING

"British Built"

England's top-all-round modeler reveals latest building ideas

■ In Europe, and in England in particular methods of airframe construction and detail design are undergoing some remarkable changes. Probably the greatest advances have been made with Wakefield models, where weight is more critical than with other types. And many of the methods developed are directly applicable to other types of models.

Fig. 1—the diagonal-longeron method now widely employed. Longerons are set on edge, giving considerable rigidity and a saving in wood volume over solid longerons. It is most easily adapted to a square section fuselage of symmetrical form.

Fig. 2—for other profile shapes and rectangular cross sections, the simplest method is to make a set of thin card formers corresponding, say, to every other station of the fuselage and mount these on a central stick. The corners of these formers are slotted to receive the longerons, after which the spacers can be cut to length, the ends chamfered off, and cemented in place. The formers themselves are split diagonally and reassembled with cellulose tape, before mounting on the stick, so that they can be split apart, removed from the final assembly and used again.

Fig. 3—Ted Evans tack-cements the longerons onto an inner cruciform jig of soft 1/16" balsa. Cement all the spacers in place and then remove the jig by breaking it up.

Fig. 4—alternative system used by members of the Ipswich club. Two sides are laid out over the *projected* side elevation of the fuselage and joined with a set of temporary spacers. These spacers, however, run from the bottom longeron at one (*Continued on page* 59)

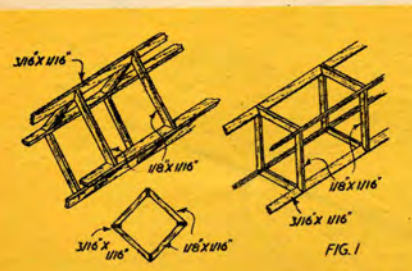


FIG. 1

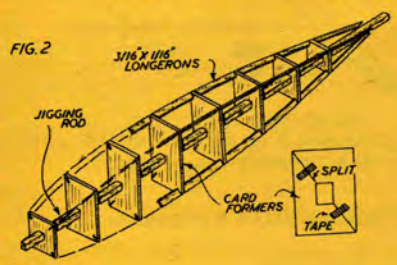


FIG. 2

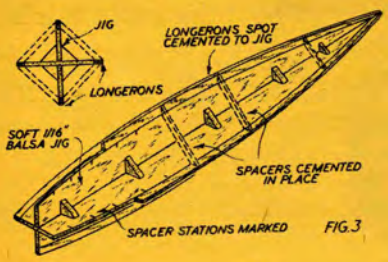


FIG. 3

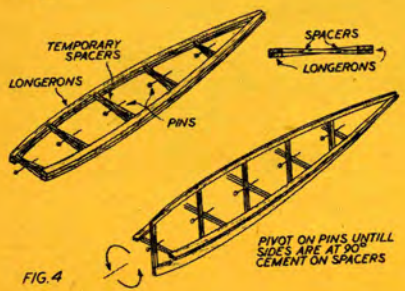
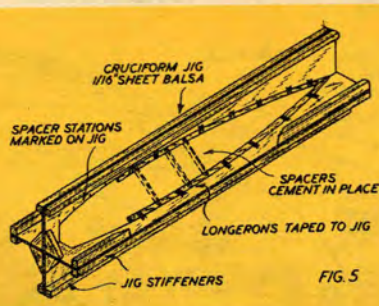


FIG. 4


CRUCIFORM JIG 1/16" SHEET BALSA
SPACER STATIONS MARKED ON JIG
SPACERS CEMENT IN PLACE
LONGERONS TAPED TO JIG
JIG STIFFENERS
FIG. 5

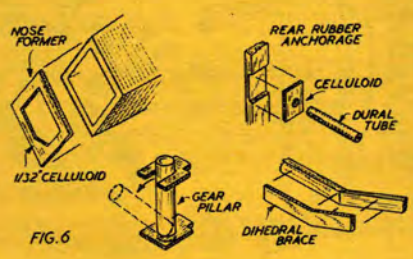


FIG. 6

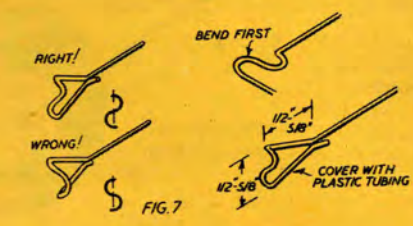


FIG. 7

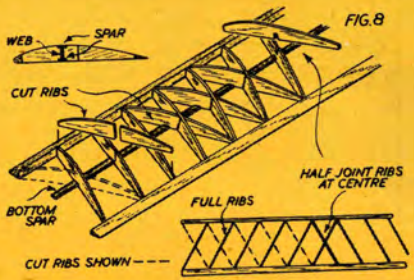


FIG. 8

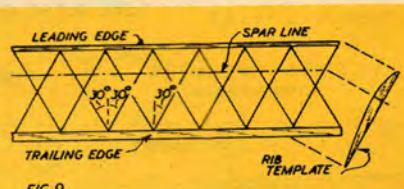
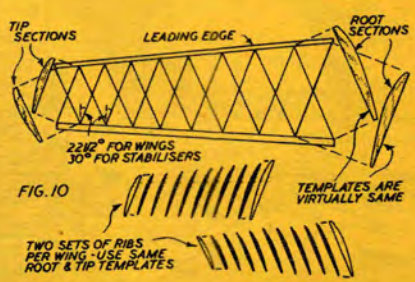


FIG. 9


TIP SECTIONS
LEADING EDGE
ROOT SECTIONS
22½° FOR WINGS
30° FOR STABILISERS
TEMPLATES ARE VIRTUALLY SAME
TWO SETS OF RIBS PER WING - USE SAME ROOT & TIP TEMPLATES
FIG. 10

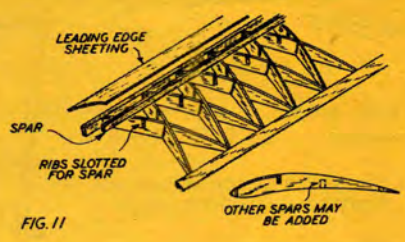


FIG. 11

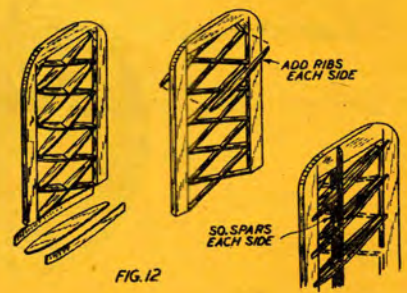


FIG. 12

Superkit F-51

■ Long known for their line of Speedee-Bilt kits that have been such a boon to the beginner in modeling, Monogram Models, Inc. of Chicago has now brought out a set of small solids, their Superkit series. Composed so far of three planes, the Mustang, Corsair and Thunderjet, these 89¢ kits feature the profusion of plastic parts that we have come to expect from this manufacturer. In the Mustang box there is a plastic "tree" that has a full 19 different parts on it, including the pilot, three wheels, landing gear struts, nose and radiator pieces, to mention just a few. In addition, there is a fully detailed plastic 4-bladed prop, and two beautifully smooth plastic pieces that form a complete mounting pedestal.

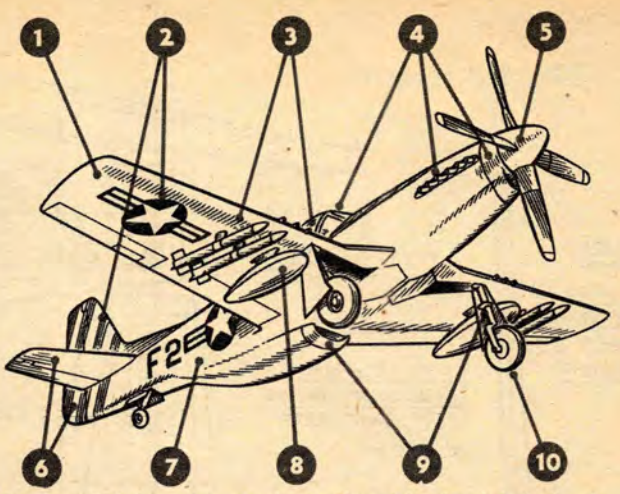
The balsa fuselage block is shaped in profile and the top is cut to the proper curve. The underside needs only slight rounding to finish the job. In addition, the block has holes drilled on the sides to take the wing pegs, assuring perfect alignment.

The two wing panels are semi-finished, having the correct airfoil shape, and need only a little rounding at leading and trailing edge. The tail surfaces are in a die-cut sheet, and there is another such sheet that includes wing template and landing gear plates. The wing pieces have stubs on them which are to be rounded off and fitted into the fuselage holes.

Two finished-turned wing tanks of wood are in the kit, and these together with the plastic rockets give the bottom of the wing that characteristic Mustang "Christmas Tree" look.

The plan is exceptionally complete; it carries wash drawings of the Mustang in regular 3-view style, and of course, finished size. Also on the front of the sheet are three photos of the finished model. Turn the sheet over and you find a complete exploded view of the model, showing every part, and 15 assembly steps, each illustrated. It is difficult to see how even the complete novice could go wrong on this Superkit.

To top off the kit, Monogram has included a piece of fine sandpaper, and a four-color decal sheet that will make this a most colorful model. In addition to the insignia, there are striped tail pieces and detail sheets.



1. Pre-shaped balsa wing panels. 2. Complete decal insignia. 3. Plastic rockets, pilot, headrest, tank mounts, etc. 4. Plastic canopy, exhaust stacks, nosepiece. 5. Plastic propeller and hub. 6. Die-cut balsa interlocking tail group. 7. Shaped balsa fuselage. 8. Turned hardwood wing tanks. 9. Plastic radiator intake, gear legs. 10. Plastic wheels. (Plastic pedestal included in kit.)

Enterprising MiG

■ An interesting phenomenon in our industry is the rapid change in interests of the consumer. First one class of model, then another will be the most popular. Right now, top interest seems to be concentrated upon small solid models.

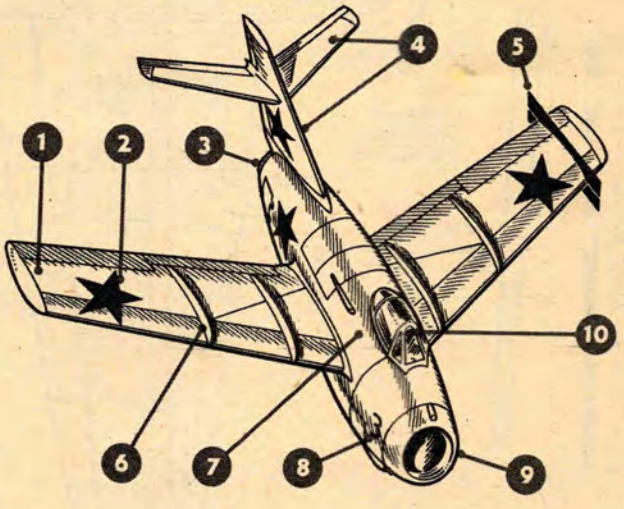
The kit makers, as usual, are right in there with planes to satisfy the demand. Enterprise Model Aircraft & Supply Co., Inc. of Brooklyn, N.Y., has introduced a line that so far includes two of the top jet planes now in the news, and two of the most famous propeller jobs. These are the MiG-15 and F-84 Sabre, and the P-40 Warhawk and P-51 Mustang. The hot little MiG is our subject right now, and like all the others in the Enterprise series, is made to exact ¼" scale. The MiG is the smallest of the four, spanning 8¼".

Enterprise calls this the Authenti-Carved line, and emphasizes that the fuselage is carved. The block looks as though some expert carver had gone over it with a sharp knife; you can see the cutting marks, but only a little sanding is needed to remove them. The process imparts the exact final shape to the fuselage. In the MiG, we find the wing roots nicely faired into the fuselage, and there is even the slight bulge below the cockpit on the left side, that covers the cartridge magazine.

The wing and tail parts are cut to planform and must be finished in the proper airfoil shape, for which accurate templates are given on the plans. The latter are very complete, and include a full-size 3-view of the finished plane, an exploded assembly picture, and even an identification 3-view.

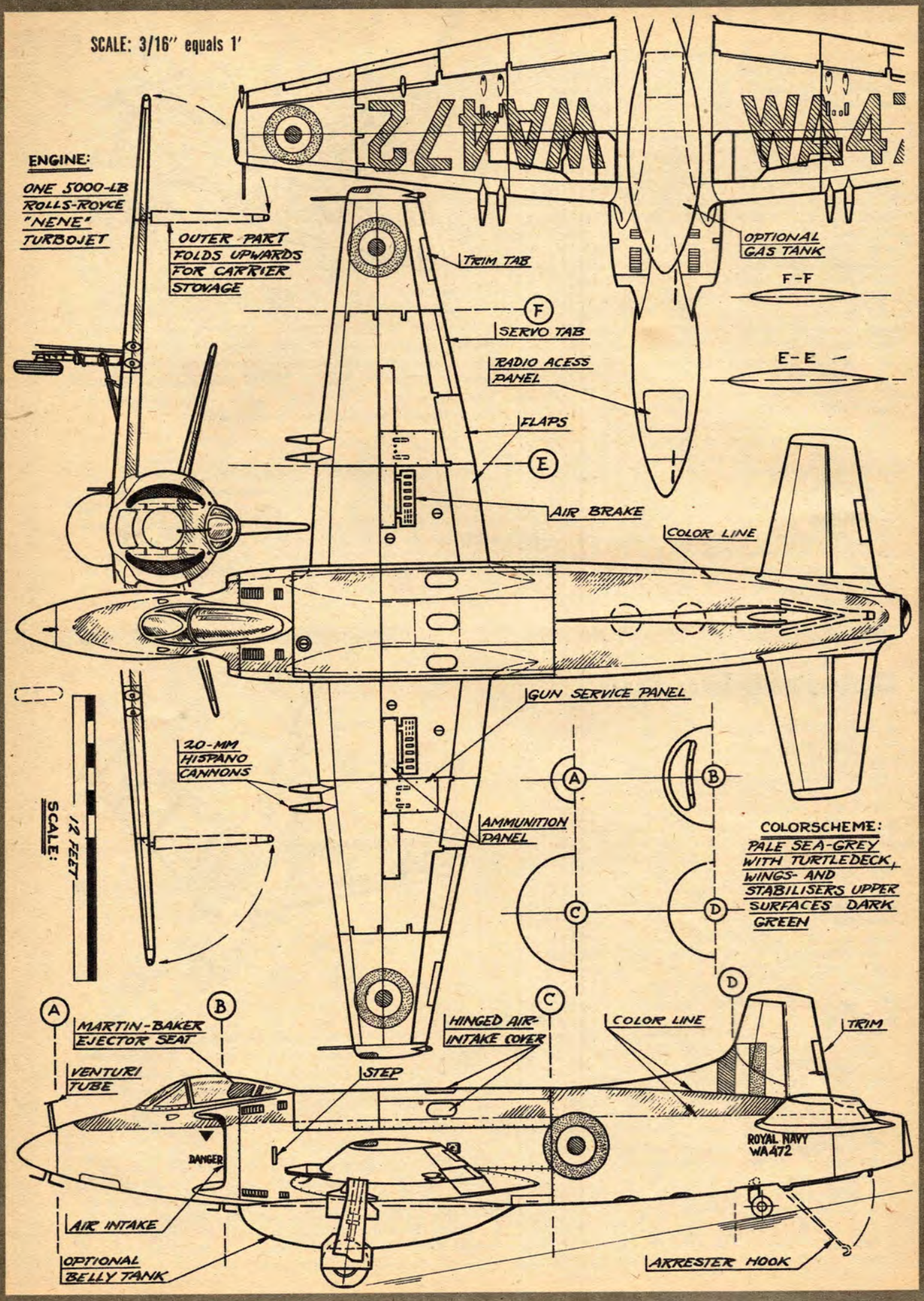
Enterprise has its own plastic moulding machines, and the results are included in this kit. The cockpit canopy is a heavy moulded piece rather than the usual thin formed sheet, and there is also a neatly shaped nose jet intake. Colored plastic sheet is furnished to make the odd "air dams" found on the MiG wings. There is a decal sheet of stars and numerals.

Enterprise has had a line of larger solid kits featuring metal parts for some time. This new $1 series will present all the features of the larger kits, but using plastic parts instead of metal.

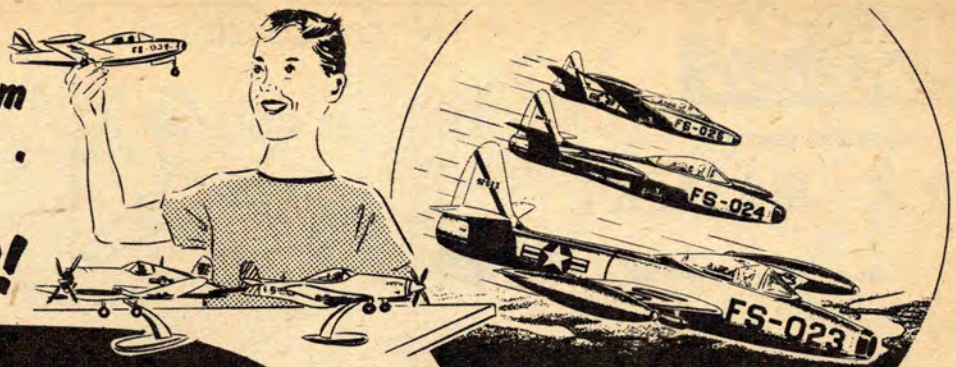


1. Die-cut balsa wing panels. 2. Decal Russian insignia. 3. Plastic tail pipe end. 4. Die-cut balsa tail group parts. 5. Wing templates. 6. Plastic wing baffle plates. 7. Fully pre-carved balsa fuselage. 8. Decal identification numerals. 9. Plastic nose piece. 10. Moulded plastic canopy.

Karlstrom Three View: SUPERMARINE F. Mk. 1 Attacker



Now You've Seen Them Fellows . . . and . . . You Know They're SUPER!

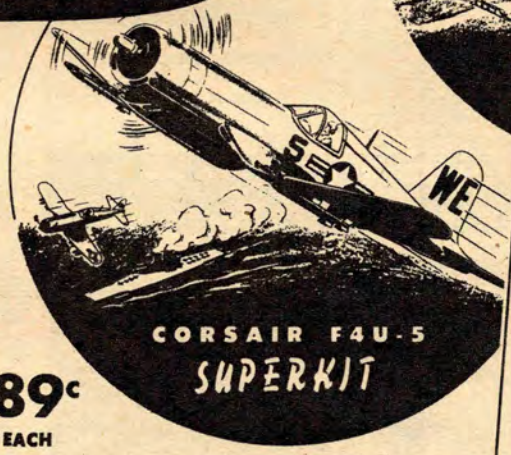


THUNDERJET F-84 SUPERKIT

MONOGRAM'S SUPERKITS

Balsa Scale Model Airplanes With Plastic Parts

MUSTANG F-51 SUPERKIT



CORSAIR F4U-5 SUPERKIT

The Big New Idea in Model Building

We knew you would go for our sensational SUPERKITS in a big way, fellows. Thanks for your praise. These are the finest airplane kits Monogram has ever produced and represent the first new idea in model building since we introduced the popular SPEEDEE-BILT flying models several years ago. At dealers everywhere. If none in your neighborhood order from address below and enclose 25c extra for postpaid shipment from nearby dealer's stock.

89c EACH

Write a Letter and WIN A PRIZE

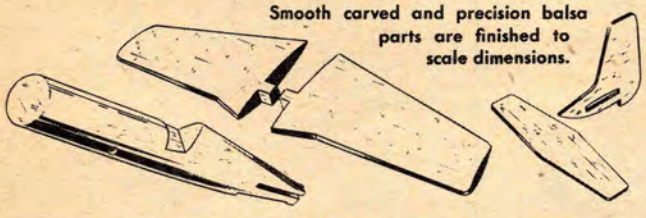
415 Prizes • Value Over $1000

3—Pedigreed Puppies—Each $75.00
6—Schwinn Hornet Bicycles—Each $59.50
6—American Flyer Trains—Each $50.00
100 T-Shirts • 300 Pilots Caps

Duplicate prizes given in case of tie. See your dealer for details. Entry blank in each SUPERKIT or you can make your own.

SUPER Shaped Balsa Fuselage, Wings With Airfoil and Tail Parts

Smooth carved and precision balsa parts are finished to scale dimensions.

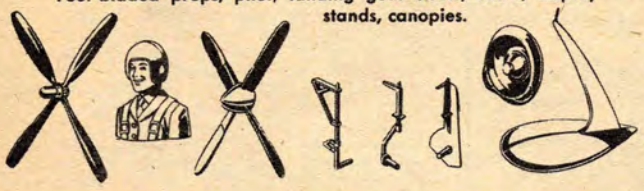


SUPER Detailed Scale Parts

Bombs, rockets, cannon, radio, antennae, landing gear, fins, hangers, wheels with spokes — finished detail parts you never would expect to get.

SUPER PLASTIC PARTS, Including a Plastic Display Stand

Four-bladed props, pilot, landing gear struts, cowls, display stands, canopies.



SUPER SIMPLICITY

You can assemble a SUPERKIT model in an hour or so. Even with all the detail, building is so easy you CAN'T do it wrong.

MONOGRAM MODELS, INC., 225 North Racine Avenue, Chicago

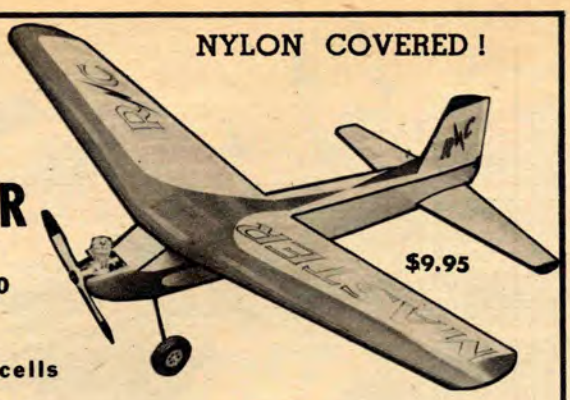
Makers of the Famous SPEEDEE-BILT Flying Models

Jasco presents

Radio Control

R/C MASTER

NYLON COVERED !



$9.95

Span 49" Area 480

Wt. 3 1/2 lbs.

Power 09 with pencells

or throttled 19

The "JASCO R/C MASTER" has been designed to be an exceptionally durable and easy model to fly !

KIT CONTAINS:

NYLON COVERING !
Die-cut ribs
Die-cut bulkheads
Shaped fire-walls
Formed landing gear
3" Dia. Rubber wheels
Shaped leading and trailing edges
Pre-shaped 3/16" sheet balsa fuselage sides

ATTRACTIVE FEATURES:

Ideal battery compartment location
Accessible radio compartment
Durable and simple to build
Permanently mounted rudder
Easy access to Escapement
Adjustable wing location
Removable stabilizer
Easy to fly

JUNIOR AERONAUTICAL SUPPLY CO.
"Pioneers in Model Aeronautical Developments"
203 E. 15th Street
New York 3, N. Y.

FIRST TIME ANYWHERE

KOREAN BATTLE TANKS!

AUTHENTIC EASY-TO-BUILD U. S. ARMY AND RUSSIAN TANK KITS · DESIGNED FROM INFO SUPPLIED BY U. S. ARMY ORDNANCE

BUILD these big scale models of champions of the Korean battlefield. Kits designed in detail from information and photos supplied by U. S. Army Ordnance.

Simple construction. Builds in a few hours. Sensationally beautiful scale models for your den or library.

U. S. ARMY "GEN. PATTON"
13-Inch Long

$2.95
PLUS 25¢ POSTAGE

ANOTHER MERCO PRODUCT

FEATURES

COMPLETELY PRE-FABRICATED • DIE-CUT BALSA PARTS • ROTATING TURRET METAL BOGIE WHEELS & GEARS • DIE-CAST GUNS & LIGHTS • METAL GUN MUZZLE & HATCHES • METAL AIR VENTS & GRAB IRONS ALL BALSA BLOCKS CONTOUR SHAPED • SHOVEL & PICKAXE • COLORED DECALS COMPLETE PLANS AND INSTRUCTIONS

RUSSIAN "MARSHAL STALIN"
14½-Inch Long

$2.95
PLUS 25¢ POSTAGE
Jobbers: Order at Regular Discounts

MERCURY MODEL AIRPLANE CO.
920-T5 UTICA AVENUE · BROOKLYN 3, N.Y.

NOW AVAILABLE AT ALL HOBBY SHOPS
If Out of Stock Order Direct

R/C Equipment

(*Continued from page 35*)

Receivers using the RK61 went into eclipse about a year ago, since Raytheon stopped making them, due to press of Government work. Fortunately, just about this time, an English tube of very similar characteristics appeared on the market, and was imported and used by several manufacturers here. Though the tube proved not to be absolutely like the RK61, it was near enough so that most of the boys could get fair operation from their gas-tube receivers, and so saved the day for many radio flyers.

During the time between the last of the RK61s and the time when R/C men had "tamed" the English tube, the XFG-1, many flyers perforce turned away from gas tubes and worked with various hard-tube receivers, as they are called. The latter have proved so successful in many cases that these flyers probably will not go back to gas tubes, even though they allow the construction of the simplest and lightest receivers.

Most modern commercially-built lightweight radio control equipment stems from that developed in 1946 by E. J. Lorenz. His original developments were taken over and modified by Berkeley Models, Inc., after the concern that first marketed them went out of the model business. Known as DE-Aerotrol, Berkeley's line is available both in finished ready-to-fly form, and in kits. The latter are very simple to assemble and bring tested radio control design within the means of many modelers who could not afford the ready-built apparatus. The receiver weighs 1.9 oz. with tube and measures 1 7/16" x 1 ¾" x 2⅜". The self-neutralizing escapement weighs only ½ oz. A single 3A5 tube is employed in the transmitter, which is fitted in a compact plywood case 4¼" x 2" x 1½"; this unit is so small that some flyers fasten it right on the antenna mast, with separate leads to batteries and push button. The DE-Aerotrol transmitter has a built-in control button, however, and is normally held in the hand during operation. A 3A5 tube is standard equipment.

The escapement and receiver kits make up into finished units exactly like those Berkeley sells in finished form. Both the kit and the finished transmitter come in a wooden case.

With the opening of the 27.255 mc. spot, this concern has brought out the Super-Aerotrol line of kits. The transmitter comes with a painted metal box, which holds all the batteries, and the short antenna is fastened on the side of this case. This unit is intended to be held in the hand, and the circuit, of course, includes the quartz crystal specified by the F.C.C. rules for this frequency.

The receiver is much like the standard Aerotrol, but has a more sensitive relay and tuning is by means of an iron-cored coil, rather than the fixed tuning of the DE-Aerotrol. The transmitter weighs 3½ lbs. complete, and the receiver 2¾ oz., less batteries. The Super line is sold in kit form at present, but will probably be marketed built-up later.

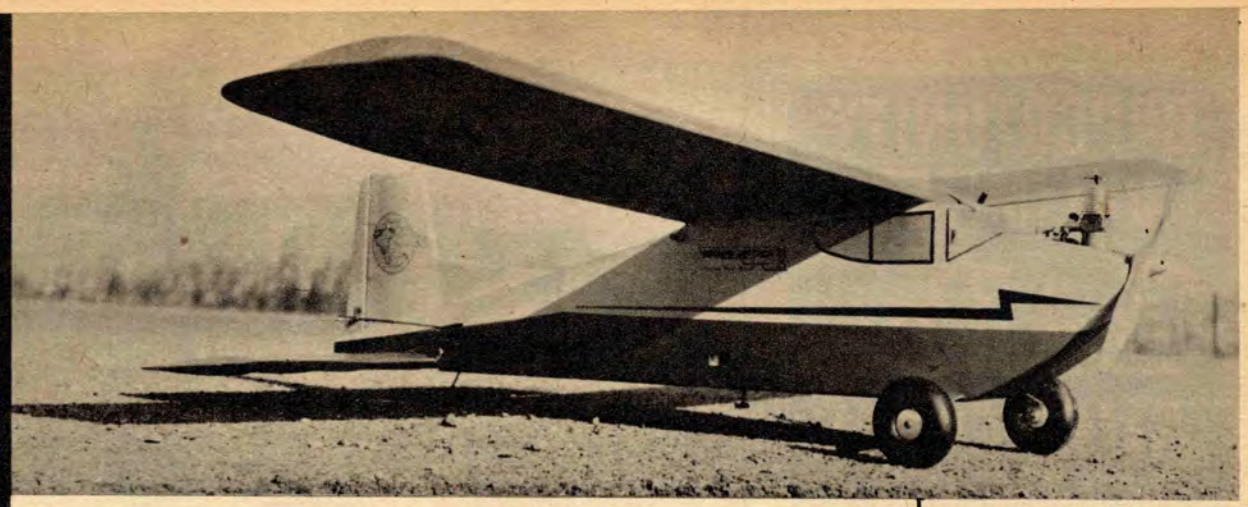
Berkeley has pioneered in use of the XFG-1 receiver tube. This tube is furnished as standard equipment in all Aerotrol receivers; the XFG-1 has been found by Berkeley to have considerably longer life. Since it is smaller than the Raytheon tube, it saves a little weight and appears to be more rugged and immune to mechanical damage.

Berkeley has been active in R/C since before the war, when owner Bill Effinger designed the Super-Buccaneer expressly for radio flying. A big plane by present R/C standards, the "Super-Buc" is still popular with experimenters who wish to carry heavy equipment.

Several R/C receiver kits, together with a long list of necessities for those who design and build their own equip-

(*Continued on page 55*)

DE BOLT MODEL ENGINEERING CO.
WILLIAMSVILLE "HOME OF DESIGN-ENGINEERED MODELS" NEW YORK USA



"LIVE WIRE"
For the first time, — R/C TRAINER
A MODEL SPECIALLY DESIGNED FOR R/C TRAINING!

The Facts...

The "Live Wire Trainer" has been especially developed for R/C training, it's STABLE, RUGGED and MANEUVERABLE, yet simple to fly. Its design allows the use of ANY RADIO including the "Citizen Ship", yet it is as simple to assemble as any "stunt" model! You will marvel at its realistic flight as it performs ALL of the maneuvers without climbing tendencies and returns to the launching point for a spot landing in spite of the wind!

Can be flown as a Sport model without R/C!

The Specifications...

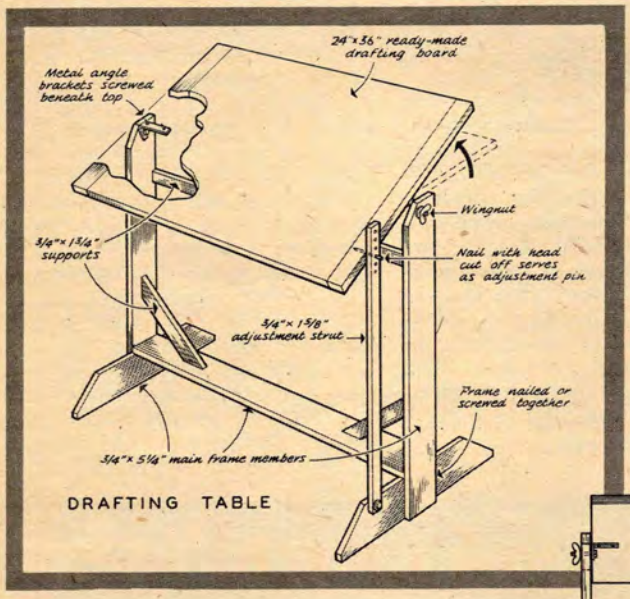
Wing Span . . . 48"
Wing Area . . . 432 sq. in.
Wing Loading . . . 12 oz./sq. ft.
Weight with R/C . . . 35 oz.
Power . . . Any .09 engine, deisel or glow
Dural Landing Gear
Closely matched power on and off flight speeds

YOU TOO CAN FLY R/C with a "Live Wire"!

Exclusive Features!

REMOVABLE R/C UNIT

★ Remove entire radio gear in less than one minute!
★ Allows easy bench checks of actual equipment used in flight!
★ Same radio gear can be used in several models!
★ Change equipment at any time!
★ R/C can be quickly removed for sport flying!


24"x36" ready-made drafting board
Metal angle brackets screwed beneath top
Wingnut
3/4"x 1 3/4" supports
Nail with head cut off serves as adjustment pin
3/4"x 1 5/8" adjustment strut
Frame nailed or screwed together
3/4"x 5 1/4" main frame members
DRAFTING TABLE

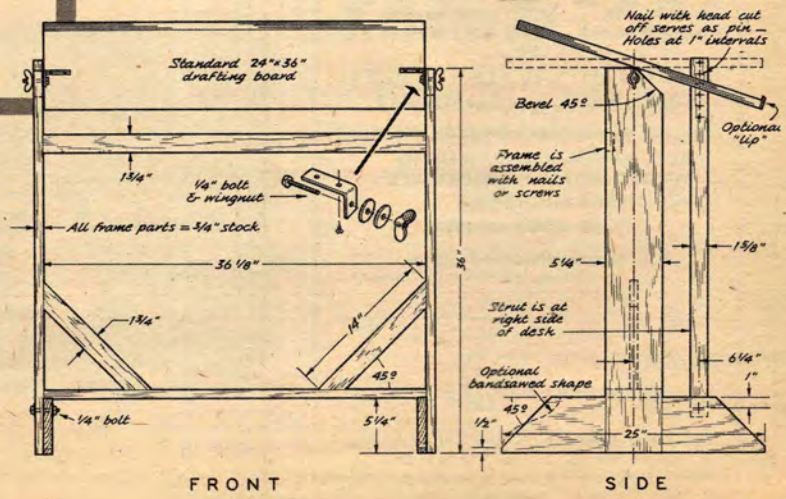
How to make a Drafting Table

For an inexpensive, convenient table you can't beat this by a TWA pilot

By TOM WARDLAW

■ This inexpensive drafting board is very easy to build. Can be made in a few hours or less. I made this one in 1940 and have used it as drafting board and work bench and just plain junk-holder ever since. When the one side becomes rough from knife cuts or glue, the other side of the drafting board can be used. The adjustable angle top is a feature along with the foot rest, making this table ideal for anyone—beginner or expert.

Bill of Materials: 1 24" x 36" drawing board. 2 pc. ¾" x 5¼" x 36", vertical members. 1 pc. ¾" x 5¼" x 36⅛", foot rest. 2 pc. ¾" x 5¼" x 25", horizontal base pieces. 1 pc. ¾" x 1¾" x 36⅛", upper cross piece. 2 pc. ¾" x 1¾" x 14", diagonal braces. 1 pc. ¾" x 1⅝" x 35", adjustment strut. (All the foregoing in pine or similar wood.) 2 ¾" angle straps. 2 ¼" bolts with wingnuts. 1 ¼" bolt with std. nut. 7 large face washers, ¼" hole. 4 ¾" wood screws. 1 large nail. Nails or screws for assembly.



OPPORTUNITY UNLIMITED

Top Pay AVIATION CAREER

Establish yourself NOW.... during the long range production program, for a CAREER IN AVIATION...to do vitally important work and share in the prestige of leadership.

AERONAUTICAL ENGINEERING
MASTER AVIATION MECHANICS
JET ENGINE MECHANICS
MAXIMUM TRAINING IN MINIMUM TIME

Step right into a good Aviation job without break-in, upon graduation...at TOP PAY... Essential Industry needs trained men and needs them badly...NOW!

RECOMMENDATIONS... 10,000 civilian graduates, 26,000 pilots and 8500 technicians trained for U.S. Military Forces ...Engineering graduates eligible for OFFICER CANDIDATE, AIR FORCE AND NAVAL AVIATION CADETS. *Approvals:* E.C.P.D., Nat'l Council of Technical Schools, Calif. Bd. of Education, C.A.A., Listed U. S. Office of Education, U. S. Immigration Service, Aircraft Industry, V. A. ... NOW AGAIN, training technicians for the U.S. Air Force.

What better recommendation could a school have?

CAL-AERO Graduates are in Demand

MAIL THIS COUPON *Today!*

CAL-AERO TECHNICAL INSTITUTE

GRAND CENTRAL AIR TERMINAL
GLENDALE 1, CALIFORNIA

Please send full information & free catalog, immediately

☐ AERONAUTICAL ENGINEERING
☐ MASTER AVIATION MECHANICS
☐ JET ENGINE MECHANICS

HOME STUDY COURSES
☐ Aeronautical Drafting
☐ Aircraft Blueprint Reading
☐ Stress Analysis and Design

NAME AGE

ADDRESS

CITY ZONE STATE

High School Attended Graduated Yes☐ No☐

AT-5 Check one: ☐Veteran ☐Non-Veteran

Dope Can

News, Views, Comments and Photos from Model Clubs and Enthusiasts in U. S. and Overseas

■ You've heard us mention many times the debt the full-scale aviation industry owes model aviation. Take the case of the "toy" jet helicopter, built and flown by Igor B. Benson, Chief of Research of the Kaman Aircraft Corporation of Windsor Locks, Connecticut. This model is an important part of the investigation of jet propulsion for transport-type helicopters.

According to Mr. Benson, as helicopters grow larger, the shaft-driven rotor systems will become too heavy to be practical, leaving jet propulsion as the only answer. The weight saved by the elimination of the heavy shafts and gears will add considerably to the payload. An extensive research program is now on at the Kaman plant to adapt gas turbine engines and jet propulsion to large-scale helicopters.

The wide use of working models in this stage of the development is explained by Mr. Benson as resulting in a tremendous saving in both time and money. A model can be made in just a fraction of the time required for full-size construction, and its cost is negligible in comparison to the expense of building experimental prototypes. Most important, though, the crash of a model does not endanger the life of the "pilot."

The model shown was built to test theories on a jet-propelled transport helicopter to be known as the Kaman K-6. Nicknamed the "Microlaboratory" by Mr. Benson and his assistant, Seymour H. Winkler, the model has a 4½ foot diameter rotor made of balsa wood. The fuselage is cut-out plywood and silk covered. The entire craft weighs but one-half pound. *(Continued on page 65)*

Further evidence of the important part models play in the full-scale aviation research picture! In the large photo Mr. Benson (see copy) flies the Kaman model helicopter. And here is a close-up of the miniature experimental craft—nicknamed the "Microlaboratory."

(Continued from page 52)

ment are avaliable from Control Research. This concern formerly offered finished equipment, too, but that line has been dropped, and emphasis is now put on knocked-down units, components and raw materials.

Control Research has had an RK61 tube receiver for some time. This tiny set measures only 1⅜" x 1¾" x 2¼" and weighs 2 oz. It features the Kurman relay and has variable condensers for both tuning and antenna coupling. When RK61s became scarce a year ago, the English XFG-1 tube was tried in this receiver, but was not too satisfactory. A new receiver was then developed, using two tubes, an RK61 or XFG-1 in the first position, and either of these or a 1V5 hard tube for the second.

This new development is being marketed in the form of a conversion kit for their single tube receiver, or for other makes of receivers of the same general design. It adds only a fraction of an ounce to such receivers, and makes it possible to use gas tubes which refuse to operate in the standard one-tube circuit.

Another advantage is that the current change is from around zero up to as much as .2 ma., which means that the relay may be set for much more reliable operation, or, cheaper and more rugged relays may be employed. Unlike normal gas-tube receivers, the plate current of the conversion job is low with no signal (around .5 ma.) and goes upward when you work the transmitter. This receiver allows much longer life from the gas tube than the standard single tuber.

Control Research is making a specialty of building up special equipment at reasonable prices. The customer may order what he wants, and it will be furnished at little over the cost of stock equipment. One other item this concern is now working on is an escapement built around a sensitive relay. The advantages of this are obvious. You have no extra escapement batteries, no relay contacts to clean, and considerably lighter weight in the whole receiver system. To gain these advantages, it is necessary to use a receiver such as their two-tuber, which gives a relatively large plate current change with signal.

John Worth of C/R advises us the outfit will have a brand-new receiver for the 27 spot frequency that will be quite different—"revolutionary" is the word he uses. The illustration shows the new canned Control Research rcvr.

One other manufacturer has sold RK61 equipment in the past, but does not do so any longer. Rockwood Radio Controls is now concentrating on the sale of a type of equipment not available from any other source. This is the so-called audio-tone apparatus. These are sold only in finished form, and while somewhat more expensive than the other makes of radio control that have been described, they *do* considerably more.

The top article in the line is a 5-control outfit that allows the actuation of any one of five control functions in the plane independently of the others. This is strictly a de luxe job, but the many advantages of the audio-tone system may be enjoyed at lower cost, for Rockwood makes the same sort of equipment in simplified form, and also makes one and three control outfits as well. To give an idea of the weight of this equipment, the complete 5-control receiver with the necessary surface actuating equipment, and all batteries, weighs 22½ oz.

It should be pointed out, however, that this outfit gives five different control functions in any order you wish—that is, without necessity of observing sequence.

All the receivers have three miniature tubes which afford very long life, and are of the same overall size, about 5½" x 3" x 1⅞". There is a thin steel reed for each control function, and as the transmitter is operated to send out different audio tones, the appropriate reed vibrates, and actuates a relay to select the desired control function. Each

Build a better **Mouse Trap**

. . . and the world will beat a path to your door.

Dyna-Model builds better model kits and the model world has beaten a path to our door.

As with our World War II line, our five new jets have a box full of real precision metal castings that are scaled down from the actual airplane parts.

Airplanes, as all modelers know, are of necessity built with light weight and strength always in the foreground. The fittings on a full size airplane often appear delicate and small for the work they must perform. When reduced down to tiny model scale, they are so intricate and detailed, it is almost impossible for the average model builder, lacking machining facilities, to reproduce them with any degree of authenticity. DYNA-MO has concentrated all its resources and knowledge on this problem and the resulting detail has never before been approached.

Not just a few parts that it would be almost impossible to do without, but *every little visible detail in the actual airplane, every single item that can be reproduced,* is given to you—props, nose pieces, nose wheel struts, main landing gear, tail wheels, rockets, drop tanks, door fairings, antenna masts, instrument panels, seats, sticks, armor plate, machine guns, radiator super chargers, exhaust stacks, oil cooler ducts and dozens of others—in fact, EVERYTHING required to make these beautiful models!

F-86 SABREJET $2.75

Photograph of Model

Look for the Dyna-Model JET LINE in the Jet Black Box

F-80 Shooting Star $2.75
F-84 Thunderjet 2.75
F-86 Sabrejet $2.75
F9F Panther 2.75
Russian MiG-15 ..... $2.75

F-84 THUNDERJET $2.75

Photograph of Model

START YOUR COLLECTION OF WORLD FAMOUS FIGHTERS

P-38 Lightning $3.50
P-40 Warhawk 2.75
P-47 Thunderbolt 2.95
P-51 Mustang 2.75
F4U Corsair 2.75
F6F Hellcat 2.75
F8F Bearcat $2.75
German FW-190 Focke Wulf 2.75
German ME-109 Messerschmitt 2.75
British Spitfire 2.75

Ask your dealer for "Dyna-Mo". If he cannot supply you write us direct, enclosing check or money order plus 25c for packing and postage—no C. O. D's.

DYNA-MODEL PRODUCTS COMPANY
76 SOUTH STREET, OYSTER BAY, NEW YORK

NOW—CONTROL YOUR MODELS BY RADIO!

This New Book

SHOWS YOU HOW

112 Pages **114 Illustrations**

Only $1.00

Radio Control means more realism in your hobby—more fun for you! MODEL CONTROL BY RADIO by Edward L. Safford, Jr. is the only complete low-priced book ever written on the principles and application of radio control.

FOR BEGINNER AND EXPERT

It starts right at the beginning — tells you what radio control is and why and how it works. It gives you all the theory behind coding, transmission systems, receivers, power control units and all the other elements which go into a radio control system. Then, it tells you how to make not only separate units, but complete systems as well. Every important step is illustrated with explanatory photos and diagrams. The author, Edward L. Safford, Jr., already well known to radio control fans, is tops in this field. An instructor in guided missile electronics at Fort Bliss, Texas, he has worked on several government radio control projects. Order your copy of MODEL CONTROL BY RADIO today and double the enjoyment you can get from your hobby.

DEALER INQUIRIES INVITED

RADCRAFT PUBLICATIONS, INC.

RADCRAFT PUBLICATIONS, INC., Dept. A-52
25 West Broadway
New York 7, N. Y.

My remittance for $1.00 is enclosed. Please send me postpaid a copy of Book No. 43, MODEL CONTROL BY RADIO.

Name.....

Street.....

City.....Zone.....State.....

reed in the receiver responds only to its own frequency, so there can be no mistake of the one that vibrates.

The three-control outfit is usually connected to give selective right or left rudder as desired, with the other reed used to give motor two speeds. The five-channel equipment can have up or down elevator added, while the single-channel job is usually employed with an escapement. The five-control outfit is furnished with a transmitter control box that features a regular "joy stick." All the de luxe transmitters have cases large enough to hold the required batteries; the simplified transmitters do not have this convenience.

The latter have simple vertical antennas, while the more costly rigs have what are called "ground-plane antennas," which afford much better efficiency and lack of reaction when the transmitter is moved toward or away from the ground. The various components of the line may be purchased separately, if desired. Rockwood also has a new lightweight line under development.

Several advantages are claimed for this system; it is very sensitive and will not respond to most interfering signals, even those from other radio control equipment. Very low power is required from the two-tube transmitter, and tubes in both transmitter and receiver have normal lives of 1000 hours or more.

Quite different in receiver design and construction from other commercial R/C apparatus is that marketed by Beacon Electronics. This is the widely used Good Brothers system, which was first offered for sale in 1945, although it was developed and has been used with great success by Walt and Bill Good for many years. Though the receiver was changed to reduce size and weight, it is electrically the same as that employed by the Good Brothers to win the Nationals R/C events in 1938, 1939, and 1940. The new production apparatus won again for the brothers in 1947, and Walter Good

NOW!

IN SEALED PACKAGES

BY Berkeley

US "T-56" RUBBER

For the first time, your dealer can now supply genuine "T-56" rubber in sealed plastic bags, guaranteeing freshness.

PACKAGED U.S. T-56 RUBBER

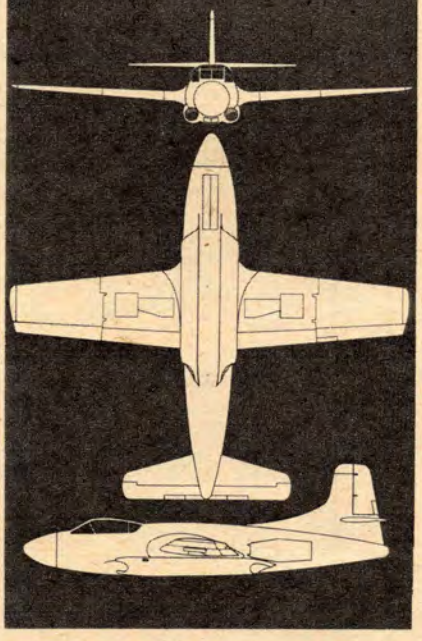
Standard lengths in fresh-sealed bags.

US-1 1/8" wide x 25 foot	30¢
US-2 1/8" wide x 50 foot	55¢
US-3 3/16" wide x 25 foot	45¢
US-4 3/16" wide x 50 foot	85¢

SOLD THRU
BERKELEY
DEALERS & DISTRIBUTORS

If no local dealer is convenient, mail orders will be filled by Berkeley Models Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.

DOUGLAS F3D-1 SKYNIGHT



The Douglas F3D Skynight was first heavy twin-jet all-weather fighter designed for carrier operations. First production version was powered by two Westinghouse J-34 engines of 3,600 lbs. thrust each. Present models equipped with J-46s of 4,000 lbs. thrust. Plane can also perform duties of ground attack and reconnaissance craft. Span 50 ft.; six 20-mm cannon in nose.

WE DELIVER FASTER

DEALERS HOBBY SUPPLY

OTTUMWA, IOWA

A complete line of fast selling products made by leading nationally-known organizations!

RAILROADS
AND ACCESSORIES
MODEL AIRPLANES
CRAFTS
TOYS

Merchandise that sells — delivered faster! Write today on your letterhead for our big new 1952 Railroad and Craft Catalog.

100% WHOLESALE

Write today!

DEALERS HOBBY SUPPLY
P. O. Box 594 A7
OTTUMWA, IOWA

topped the field at the 1949 Nationals with the same equipment.

The Beacon line includes a transmitter using a single 3A5 tube and housed in a 5″ x 6″ x 9″ metal case which holds the batteries. The receiver also uses a 3A5 tube (only one-half of this double-section tube is active in the receiver), and a special polarized sensitive relay built by Beacon to the Good Brothers design. The receiver circuit, though it operates on the 50-54 mc. band, is a bit different from that normally employed in single-tube R/C receivers. It is tuned at the factory for best operation and is highly sensitive. The receiver measures 4″ x 1 7/16″ x 2¾″ and weighs 5 oz.

The Beacon line is offered only in completed form—not in kits—but the super-sensitive polarized relay is available separately. Along with the complete R/C outfit, Beacon includes one of the most complete Instruction Manuals in the business. It features operation, trouble-shooting, several pages of general design data for R/C planes, plus a most comprehensive section on installation and actual flying of an R/C plane. Written by the Good Brothers, this Manual contains a real store of information as collected by them during their long and successful period of activity in radio flying.

A relatively new entrant in the R/C field is the Vernon C. MacNabb Company with their Citizen-Ship control system. This equipment operates on 465 mc., in the so-called Citizens Radio Band. No amateur operator's license is needed to legally operate the Citizen-Ship transmitter. Because it operates on a much higher frequency band, the MacNabb equipment is entirely different from that of any other R/C manufacturer.

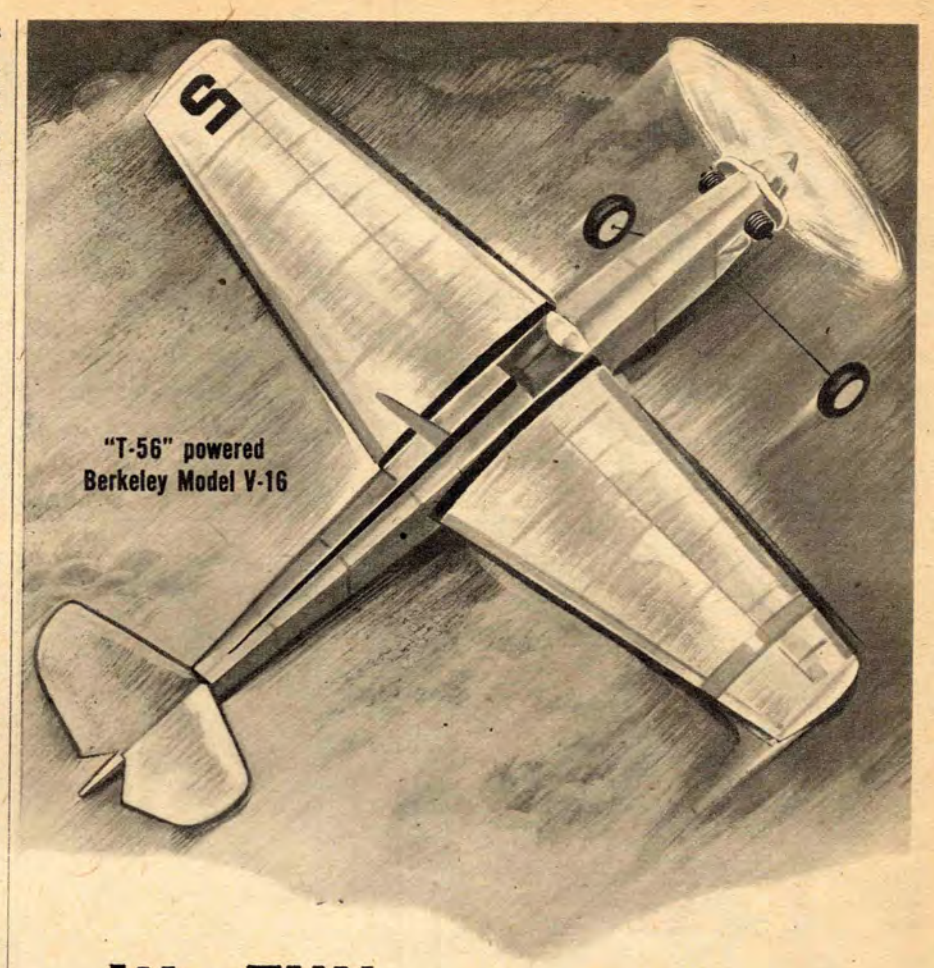
The transmitter with its batteries is housed in an aluminum box about 11″ x 4″ x 3″, on one end of which is mounted the compact antenna system measuring only about one foot long. On the box are operating instructions, an on-off switch, and a keying button. There is no tuning control. This transmitter is strictly fixed-tuned, set at the factory to proper frequency. The user is not even allowed to change tubes, but the single tube in the unit has a life of several thousand hours and is very rugged.

The fixed-tuning and "no-tamper" requirements were necessary to obtain government approval of the transmitter for operation in the Citizen's Band.

A small bulb lights up when the transmitter is in use and indicates that the batteries are in good shape. Should the bulb fail to light, new batteries should be installed immediately; if you do not do this, you may have no control. The transmitter with antenna and batteries weighs 4 lbs., and is normally held in the hand with the antenna pointed at the airplane.

The MacNabb receiver, which has recently been considerably reduced in price, is also entirely different from other R/C receivers in many respects. It weighs 5½ oz. with tube, and has the antenna built right in. It, too, is of the fixed-tuned variety, and though you can legally tinker with the receiver, it isn't advisable. The B battery drain of this unit is extremely small, and the tiniest hearing aid B batteries will give good life. Because of the high frequency and the special type tube required, more A battery power must be supplied than in other receivers. Installed weight of receiver with smallest practical A and B batteries is 11 oz.

The MacNabb equipment is available either for the 465 mc. Citizen's Band—only a simple registration is required for legal operation—or for the 420 mc. amateur band. On the latter, you can re-tune, change tubes, etc., but a regular amateur license is required. The receiver includes a sensitive relay which may be connected to an escapement, motor, or other control-actuating device. While this apparatus has been on the market for less than two years,



It's FUN...

It's SPORT...

and it costs so little to fly a rubber-powered plane wound with

T-56®

POWER OF CHAMPIONS

UNITED STATES RUBBER COMPANY

ROCKEFELLER CENTER • NEW YORK

All outdoors is calling you!

enjoy it more on a

HARLEY-DAVIDSON 125

WITH Tele-Glide® FORK

FOLLOW THAT URGE to get out in the fresh air and sunshine. With a Harley-Davidson 125 as your "trusty steed" there's nothing to obstruct your view — you enjoy that wonderful out-in-the-open feeling to the fullest. And talk about fun . . . say, you can really roll up miles of enjoyment — as you ride to nearby parks, woods, camps and other favorite haunts. Yes, Mister . . . if you have a yen for outdoor thrills, you sure can get 'em when you own a Harley-Davidson 125. Get on the fun bandwagon now. See your dealer or send us 25¢ for a copy of the ENTHUSIAST Magazine filled with power-riding action pictures and stories, and literature on the 1952 models.

HARLEY-DAVIDSON MOTOR CO.
Dept. AT-5 • MILWAUKEE 1, WISCONSIN

it has been very successful. Gene Foxworthy won the 1950 Dallas Nationals R/C event using Citizen-Ship equipment in a plane described in the May, 1950, issue of Air Trails.

MacNabb has just announced an item of interest to *all* R/C flyers, not only those using the Citizen-Ship sets. This is a compact test meter which measures O-1.5 ma., and has two voltage ranges of O-6 and O-150 V. It is housed in a small Bakelite case, with a cord to plug in for the current reading, and pin jacks on the top. Test leads are also included.

This same concern is working on a low cost outfit for 27.255 mc. While final details are not known, we learn that the transmitter will have two tubes and the receiver will employ a single hard tube.

Several American model firms are importing English R/C apparatus, which has had a very good sale in this country. One of the first of these was American Telasco, which carries the E.C.C. line. All the equipment is available for either 27 or 53 mc. There is a small gas tube receiver using the XFG-1, and which is protected by a Bakelite case. This is their No. 950, and a 951 using a single hard tube, the 3Q4, is available at the same price. The two are almost identical in size and weight. 1½" x 2½" x 1⅛" and 2 oz.

This firm offers the E.C.C. sensitive relay separately; at ½ oz., this is the lightest sensitive relay to be had. American Telasco also carry the E.C.C. International transmitter, a de luxe job which has two 3A4 tubes, a plate meter, pilot light, etc., and comes in an attractive metal case which has plenty of room inside for all batteries. It measures 15" x 8½" x 5½" and the power input is about 4.8 watts. The same transmitter is sold in kit form with a completely finished R.F. unit, meter and all other parts, but less the case. No receiver kits are available at present.

Polk's Modelcraft Hobbies imports the English E.D. apparatus, which features a 1¾ oz. receiver completely enclosed in a Bakelite tube, which is said to be practically crashproof. The E.D. transmitter uses a single 3A5 tube and is enclosed in a metal box. The antenna mounts on the side, and is of the vertical type. E.D. apparatus—though of a more complex design than that described—was recently used to steer a model power boat across the English Channel, during which run the radio equipment functioned without a miss. Polk's has arranged to convert 6-meter E.D. sets to 27 mc. at a cost of $12.50.

Still another English outfit, The Roland Scott Comet line, is being handled by All American Motor Exchange. The equipment consists of a gas tube (XFG-1) receiver of very light weight, a simple 3A5 transmitter and self-neutralizing escapement.

All of the R/C concerns we have mentioned sell actuating equipment of one sort or another, but we will cover this in a later article. Also, even though we have not mentioned it specifically, it is certain that they will all have equipment for the 27.255 mc. spot. Some will simply convert their present line to the new frequency, while others will bring out entirely different transmitters and receivers.

The immediate future of radio control is strictly dependent upon world conditions. Most R/C manufacturers are actively marketing the equipment we have described even though some materials, tubes especially, are becoming hard to get. Several of the concerns we have covered have new items under development. When these units will be available is a question, but in the meantime you can purchase the equipment we have described here, and get into this fascinating game right now.

Keep informed on radio control with R/C ROUNDUP each month in Air Trails

NEWS! E-Z-JUST Minimount

• Test and break-in stand that clamps engines up to .19 displacement in a few seconds! Made of selected hardwood with adjustable clamps and locking pins. Only 85c

STANDARD E-Z-JUST

test and break-in stand. Locks up any engine in a few seconds. Holds it from pulling out while "revving up." $1.50

Handiest Case Ever Designed!

E-Z-OPEN SMALL PARTS CASE

• Easy-view clear plastic case with 4 compartments with individually opening and latching covers. Prevents mixing parts or spilling entire contents. Size approx. 7" x 2". 50c

FAMOUS E-Z-JUST PLASTIC CONTROL HANDLES

• Choice of "Standard" 330 lb. test cable leader or "Hot Rock", minimum test 150 lbs. ..... ea. 85c

AT LEADING DEALERS EVERYWHERE
MFG. BY PHIL-LEYS
CHEEKTOWAGA 25, N. Y.

IT'S NEW! IT'S SENSATIONAL

Ideal MODELS AQUA PAL Skiff

No. 1530
16 INCH

CAN BE POWERED WITH A TINY ELECTRIC MOTOR OR AN OUTBOARD MOTOR

Ideal is first again with the "Aqua Pal" Skiff. Completely prefabricated with die cut oar blades, panels, bow plates, seats, etc. Two molded balsa sides. Cast oar locks and horns. Step-by-step picture plan.

Only $1.50 COMPLETE

Be sure to see it at your dealer.

PIONEER TRAIL

AUTHENTIC KITS COMPLETELY PREFABRICATED WITH METAL, PLASTIC AND DIE CUT PARTS

The famous Wells Fargo Stage Coach which carried U.S. Mail and Gold shipments.

• No. 501 STAGE COACH
• No. 502 BUCKBOARD
• No. 503 COVERED WAGON

$1.50 EACH

See your Dealer
or Order direct. Add 25¢ for postage.
• Illustrated Catalog 10¢

IDEAL MODELS
24-26 WEST 19th ST., NEW YORK 11, N. Y.

"British Built"

(*Continued from page 48*)

side to the top longeron at the other, and the adjacent spacer the other way. Only enough spacers need be used to keep the longerons to their true outline.

Each pair of spacers is then pinned together at their center points and the two side frames are rotated until they are at ninety degrees. The final spacers can then be cemented in. The temporary spacers are then removed.

Fig. 5—external jig of 1/16" balsa; the four longerons are held in place with cellulose tape. To remove the finished fuselage from the jig, one section of the jig is cut away.

Fig. 6—thin sheet celluloid is used instead of thin ply for parts such as the nose former, rear rubber anchorage and even dihedral braces in wings.

Fig. 7—S-hooks used on the shafts prevent the rubber climbing around the hook. There is, however, a right and a wrong way to bend an S-hook. Viewed from the back, or the "rubber" end, the "S" form must be laterally inverted—otherwise the rubber will just climb around the shaft when the motor is wound up. The simplest way of bending these hooks is probably to form the "S" first in a length of wire and then make the angled bends to complete the hook.

Fig. 8—a simple geodetic tailplane structure is exceptionally rigid torsionally and, provided an adequate mainspar arrangement is used, equally resistant to bending.

First cement a number of full ribs between the leading and trailing edge spars, and also over the bottom main spar. The remaining ribs are then cut in half and cemented in place, butt-jointed to the full ribs. These half ribs are trimmed to correct length. Light sheet webs are then added between the ribs and the top mainspar cemented in place.

Fig. 9—all the ribs are arranged at a fixed *pitch angle*, which should range between 22½ and 30 deg. A smaller pitch angle results in loss of rigidity; a larger angle gives a deteriorating airfoil section between the ribs. All the ribs required can be cut from one template.

Fig. 10—in the case of a tapered outline the same principle of laying out the ribs can be applied, a fixed pitch angle. The rib spacing actually decreases towards the tip. Root and tip rib templates can readily be plotted and the two root templates and the two tip templates are, for all practical purposes, identical. The two sets of ribs for each panel can, therefore, be cut from the same templates.

Building follows the same procedure as with the parallel chord panel, except that in the case of wings the spar arrangement should be modified.

Fig. 11—use a single mainspar let into the tops of the ribs, with sheet covering between this spar and the leading edge. This helps preserve the nose airfoil section. Additional spars may be slotted in, as required, after the assembly has been removed from the building board. It will be so rigid then that it will not warp.

Fig. 12—the geodetic principle also suits fine construction. The build-up method is preferable, since it enables the basic frame to be cemented within the outline with everything pinned down flat. The airfoil section is built up by adding the capping strips. It is an advantage to incorporate a spar to resist bending loads.

Now there are 2
'SPITTIN' IMAGE'
models by
Monarch
SPITFIRE
WINGSPAN — 20"
3.95 by mail, add 30¢
with SPINNER
COMPLETELY PRE-FABRICATED
A magnificent new control line model of Britain's fabulous Spitfire joins the famed Curtiss P-40F in Monarch's new series of "SPITTIN' IMAGE" models. The enthusiasm created by these two great models is beyond description—for they are indeed products of the finest possible design, and most brilliant PRE-FABRICATION. Fuselage, wings, etc. are most beautifully shaped to exact contour and shape. Here are scale gas models that look like "the real thing." The contents are truly lavish—multi-colored decals—enormous illustrations—and the luxurious extras you would expect. Visit your dealer, and see why these models are considered without equal—why they represent "THE ULTIMATE IN FINE MODEL DESIGN."
MONARCH MODEL AIRCRAFT CO. Inc. Brooklyn 33, N. Y.
FOR ALL HALF "A" ENGINES — .045 to .099
COMPLETELY PRE-FABRICATED
CURTISS P-40F
WINGSPAN — 20 in.
NOW 3.95 at your dealer by mail, add 30¢
with SPINNER
THE PERFECT HALF 'A' FREE FLIGHT MODEL
SOT-FRE
WINGSPAN — 34"
Unquestionably the greatest free flight model ever designed. The PRE-FABRICATION is amazing! No sticks and sheets — all fully shaped WHOLE sections. Clean, smooth lines — remarkable performance! Wingspan 34". At your dealer, $2.95 — by mail, add 15c.
Please order from your dealer. We cannot serve you as efficiently. Order direct only if no dealer near you.

Contest Planners:

This time... offer

TROPHIES

. . . the award that gives a lifetime of pleasure!

Cash awards are spent. Merchandise is used or put away — and forgotten. But a Russell Trophy is a lifetime treasure, proudly won, proudly displayed . . . an everlasting symbol of achievement. What's more, trophies create a greater incentive to enter and win . . . and they stand, year after year, as perpetual advertising. So, this year, offer RUSSELL TROPHIES . . .

- Especially designed for model aircraft meets.
- Plane and modeler figures finished in rich gold color.
- Bases of beautiful ivory Bakelite or golden grained walnut.
- Special designs (if desired), custom-built for memorials, etc.
- Expert engraving, hand or machine. (Engraving optional.)

Special modeler awards to fit every contest budget! Trophies, $3 to $300. Plaques, $3.50 to $33. Medals, 75c to $15.

Free Beautiful catalog of modelers' trophies, plaques, medals. Or send 35c for 60-page general catalog. *Write Today.*

RUSSELL BROTHERS PRODUCTS

312 K.P. BLDG. DES MOINES, IOWA

Don Donahue winds his return gear Wakefield. Tripod provides positive anchor and no strain.

■ Pop Robbers in making his Annual Report of the Western Associated Modelers offers some sound advice for you winners:

"Look back, my friends, to those who follow behind you, for it is their efforts which have made you a winner. Without them, you would have stood alone—unjudged. Thus, it is for them that the rules were written—the Novice, the Beginner, the Advanced and the Expert—rules which are the standards by which to judge the ability of each. It is their ability which sets the standard by which you have been judged and named a champion. It follows that the greater their ability becomes, the greater your achievement in winning. So reach back a hand of encouragement, with a word of thanks for their fellowship, lending a hand where it is needed, and then —lead on to greater heights."

Pop puts an entirely new light on helping others: don't treat the other guys as if they didn't exist after you have won but remember—if they hadn't been there you would not have had anything to win. No matter how good you get, or how good your design, help the other guy.

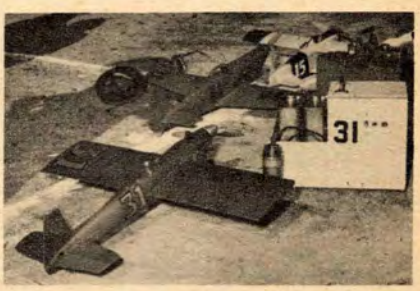
The WAM had a very successful season. They had a total of forty-six associated clubs that took an active part in the organization, eleven sanctioned contests, in which 1036 contestants entered 1799 models, or almost two models for each contestant. The Salinas meet was the largest with 142 fellows entering 275 models.

They classify the flyers into four groups as noted in Pop's epistle, then give special awards to the clubs scoring the most beginners' points and to the club making the most advancements through the groups. As to how the flyers are classified, there are definite and exact rules for this which automatically upgrade the flyers who excel consistently.

Last year the Alameda Aero Modelers scored more stunt points than any other club; they were closely pressed by the Stockton Gas Model Association. That same Alameda gang, though, scored almost four times the speed points as did runners-up Palo Alto U-Liners; the Newark Model Busters were the leading beginners while the Pittsburg Cloud Busters led the way in Advancement.

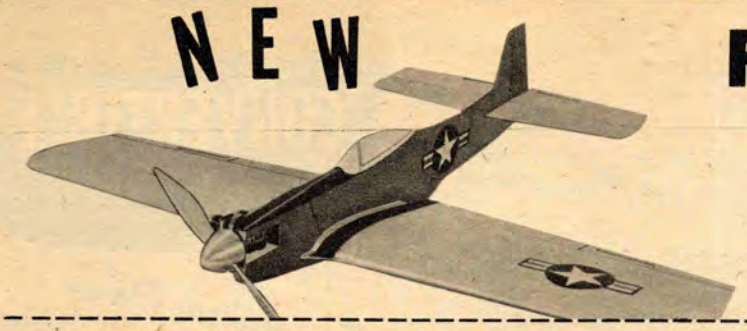
When one (*Continued on page 63*)

Everett's "El Sobo" did 21:07 at Tucson contest. Similar to his new Nordic A/2 "El Nordo". That has smaller fuse cross-section.



Granger Williams' fast, clean all-balsa team racer in foreground. The neat, compact tool box has plug-in connections for batteries.

NEW F-51 MUSTANG



Unbeatable 38" Combat Stunt Control Line Model

Kit S-2 for A, B, C Engines

only $2.95

designed by MATT KANIA

Another outstanding achievement by Matt Kania! If it's combat stunt flying you want—this is it! Designed and flight tested by one of the world's foremost model designers ... and backed by Sterling's finest material and workmanship.

RESORTER "20" Kit B-4

Breathtakingly Beautiful and Completely Prefabricated!

ONLY $3.25 Actual photograph of model built from kit. Length 12½", Beam 4½"

Authentic in every detail from the Century Boat Company's original factory plans! Completely die cut, with entire mahogany exterior and includes a complete set of ship fittings and drive unit. May be powered with any ½A gas engine or electric motor.

SEA MAID "20" Kit B-5

It's a Cinch to Build this Luxury Speed Boat!

Only $2.95 Actual photograph of model built from kit. Length 12½" Beam 4½"

See These Other Sterling Models

Monocoupe	$4.95
Howard Pete	5.95
Mr. Mulligan	4.95
The Waco	5.95
Polish Fighter	5.95
SE 5	5.95
Ryan S-T	5.95
The Maverick	1.00
Ringmaster	2.95
The Hawk	1.50

SCALE POWER BOATS		TUBING
Richardson	$5.95	Sterline and Sterl-X
Higgins	4.95	
Buccaneer	7.95	

AT YOUR DEALER'S NOW!

Sterling models

1530-34 N. Hancock St. Philadelphia 22, Pa.

AMERICAN AIRCRAFT MANUFACTURERS

Aerocar Co., Longview, Wash. Aerocar, roadable airplane.

Aero Design & Engineering Co., Bethany, Okla. Aero Commander, 5-7 place twin-engine light transport.

Aeronca Manufacturing Corp., Middletown, Ohio. Aeronca Champion, 2-place lightplane; Aeronca Sedan, 4-place personal plane; L-16A, military liaison plane.

American Helicopter Co., Inc., 3613 Aviation Blvd., Manhattan Beach, Calif. XA-5 and XA-6 pulse-jet-powered helicopters.

Anderson, Greenwood & Co., Municipal Airport, Houston, Texas. AG-14, 2-place all-metal pusher lightplane.

Beech Aircraft Corp., Wichita 1, Kan. Beech Bonanza, 4-place personal plane; Beech 18S, twin-engine transport; Twin Bonanza, light twin-engine transport (mil. desig. YL-23); T-34, military trainer and armed liaison (civ. desig. Mentor); T-36, twin-engine trainer.

Bell Aircraft Corp., Buffalo, N. Y. Helicopters: 47D, 2-place helicopter (mil. desig. THL-4, HTL-5, H-13D & E); Model 48, 7-9 passengers (mil. desig. H-12); Model 54, 3-place high-altitude (mil. desig. XH-15); Model 61, large twin tandem rotor (mil. desig. XHSL-1); X-2 and X-5, high-speed research planes.

Bellanca Aircraft Corp., Newcastle, Del. Cruisaire, Cruismaster and Pacemaker, 4-place personal planes.

Boeing Airplane Co., Seattle 14, Wash. Stratocruiser, military versions: C-97 Stratofreighter & KC-97 aerial tanker; B-50

SMALLSTER AUTO KITS

AUTHENTIC MINIATURES OF CARS OF BYGONE DAYS

GRANDFATHER'S PRIDE OF YESTERYEAR... FOR YOUR PLEASURE TODAY!

NOW! . . . FACTORY DIRECT TO YOU PRICES

To celebrate our Anniversary, we are making this Introductory Offer at factory-to-you prices for a limited time.

ALL KITS NOW ONLY $1.50 POST PAID

SAVE UP TO $1.45 Per Kit LIMITED TIME!

(A) EMF 1909 3-in-oner, wheelbase 6¼".
(B) 1904 Cadillac, wheelbase 4½".
(C) 1905 Reo, 4 passenger runabout, wheelbase 5".
(D) 1905 White Steamer, wheelbase 5 13/16".
(E) 1909 Hupmobile runabout, wheelbase 5⅜".
(F) 1909 EMF 30 Racer, wheelbase 6¼".
(G) 1908 Baker Electric, wheelbase 5".

Antique auto kits designed for easy step-by-step construction, contain precision die-cut wood and card parts. Completely prefabricated, kits have realistic details on all plastic parts.

ORDER TODAY DIRECT FROM

FADOR MANUFACTURING CORP.
ELMIRA, N. Y.

COME TO THE UNIVERSITY OF HOUSTON FOR YOUR TECHNICAL AND VOCATIONAL TRAINING

One of America's Large and Most Modern Universities

Select from these fascinating fields

- ☐ Aeronautics
- ☐ Air conditioning and refrigeration
- Automobile trades
  - ☐ Body and paint
  - ☐ Mechanics
  - ☐ Upholstery and trim
- ☐ Diesel
- ☐ Electricity
- ☐ Electronics
- ☐ Furniture upholstery
- Industrial mechanics
  - ☐ Drafting
  - ☐ Machine shop
  - ☐ Welding
  - ☐ Woodworking
- ☐ Photography
- ☐ Radio
- ☐ Stationary Engineering
- ☐ Television

PREPARE FOR YOUR FUTURE NOW . . . with very latest methods and equipment, at modern U. of Houston College of Technology. Entrance: high school diploma, *or over 18 and ability to profit from instruction.* Beautiful campus—250 wooded acres in Houston, Texas—city of tomorrow. Full college activities, sports, social life. Day or night, short or longer courses. Co-op work-study programs . . . earn part of tuition and expenses with part-time job *in your own career field,* while you learn. Personal vocational counselling. Diploma on completion and all credits apply towards Bachelor of Applied Science Degree. Job placement assistance. June, Sept., Feb. semesters. Mail ad now for Free fully-illustrated brochure. No obligation. Mark X before choice of subject. *Do it today!*

Administration Building

University of Houston, College of Technology

Dept. 252 — Houston 4, Texas

RELIABLE EFFECTIVE

RADIO CONTROL

ECC TELECOMMANDER

ECC Telecommander radio control units are made in England by master radio craftsmen . . . engineered in every respect for maximum reliability and service . . . sold at prices that are remarkably low for such superb electronic equipment.

INTERNATIONAL TRANSMITTER

Low-loss RF construction throughout . . . extremely stable and easy-to-operate.

Size—15 x 8½ x 5½ inches
Input—4.8 watts (approx.)
Batteries required:
H.T.—120-150 volts
L.T.—1.5 volts
Frequency—27 or 54 M/C
Price (less batteries)—$34.95
With crystal control for 27.255 M/C . . . $39.95

Also available in kit form . . . the same fine unit without carrying case. Simple to assemble—no actual radio work involved.

The kit includes:

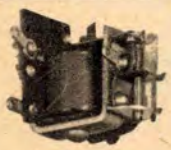
The basic transmitter
Two 3A4 valves (or equivalent)
Milliameter
Flexible push-button key lead
Keying choke
Collapsible whip-type antenna
Plug-in antenna socket
On-off switch
External indicator light
All connecting plugs and sockets
Complete instructions
Price $19.95
* With crystal control for 27.255 M/C $27.50

MODEL 951 RECEIVER (illustrated)

An engineering achievement . . . sensitive, reliable, sturdy . . . low current drain . . . very low weight.
Size—3¼ x 1¼ x 2¼ in. Weight—2 oz.
Price—Including relay and 3Q4 valve or equivalent—$18.95
Batteries required: HT.—60-90 volts; L.T.—1.5 volts

MODEL 950A RECEIVER

Uses the English Thyratron valve for super-sensitive, long range operation . . . housed in a bakelite case.
Size—1½ x 2½ x 1⅛ in. Weight—2 oz.
Price—Including relay and XFG-1 valve—$18.95
Batteries required: H.T—45 volts; L.T.—1.5 volts



MODEL 5A RELAY

Rugged, durable . . . works on very low current change . . . solid silver contacts . . . extremely lightweight.
Size—1 x 1¼ x ⅝ inches.
Weight—½ oz.
Price—$6.50

TYPE 3 ESCAPEMENT

A versatile performer . . . light, compact, positive acting . . . supplied with two interchangeable rotors. Rotors are ball bearing mounted.
Size—2¼ x 1¾ x 1 inches
Weight—⅞ oz.
Price—including both rotors—$5.00

*No operator's license required with 27.255 M/C crystal controlled transmitters.

AMERICAN TELASCO, LTD.
55 West 42nd St., New York 18, N. Y.

Superfortress, KB-50 aerial tanker; B-47, six-jet bomber; B-52, eight-jet bomber.

Cessna Aircraft Co., Wichita, Kans. Cessna 140, 2-place lightplane; 170, 4-place lightplane; 190 and 195, personal planes; L-19A, military liaison; C-126 (civ. 195), light military transport.

Chase Aircraft Co., Inc., West Trenton, N. J. C-122 and C-123, two-engine military cargo, transport and assault aircraft; XC-123A, four-jet military transport.

Consolidated Vultee Aircraft Corp., San Diego, Calif. Convairliner, twin-engine 40-passenger commercial transport; Turboprop Convairliner, experimental transport; B-36, six-engine and four-jet bomber; XC-99, six-engine military transport; R3Y-1, four-turboprop Navy flying boat; T-29, navigation trainer (military version of Convairliner); XF-92, delta wing research plane.

Doman Helicopters Inc., Municipal Airport, Danbury, Conn. Helicopters: Model LZ-4, 2-place; LZ-5, 3-5 place.

Douglas Aircraft Co., Santa Monica, Calif. Super DC-3, DC-6, A & B, DC-7—also military versions of these; AD-2-5, Navy attack; XA2D; XA3D; F3D Skynight, twin-engine night fighter; F4D-1 Skyray, delta type fighter; C-124 Globemaster, military transport; D558-2 Skyrocket, high-speed research plane.

Fairchild Engine & Airplane Co., Hagerstown, Md. C-119 Packet, cargo & transport, Navy designation R4Q-1; C-120 Pack-Plane.

Fletcher Aviation Corp., Pasadena, Calif. FD-25 Defender, armed liaison; BT-22, interchangeable trainer, piston or jet engine.

Grumman Aircraft Engineering Corp., Bethpage, L.I., New York. F9F Panther, jet fighter series 2 through 5, and F9F-6 Cougar; AF2S and AF2W Guardian, antisubmarine; SA-16A Albatross, USAF rescue and utility amphibian, Navy desig. UF-1; XF10F, experimental jet fighter.

Gyrodyne Co. of America, St. James, L.I., N. Y. Model 2C, 5-place helicopter; in development: Model 3 Convertaplane and Model 21 cargo helicopter.

Hiller Helicopters, Inc., 1350 Willow Rd., Palo Alto, Calif. Hornet, ramjet one-place helicopter; H-23B and HTE-1 military helicopters, versions of Hiller 360.

Kaman Aircraft Corp., Bradley Field, Windsor Locks, Conn. HTK-1, military helicopter (US Navy); K-225.

Lockheed Aircraft Corp., Burbank, Calif. Constellation model 749, and Super Constellation model 1049, commercial transports; P2V4 and 5 Neptune, Navy patrol bombers; F-94 A, B and C, USAF all-weather fighters; T-33, USAF 2-place jet trainer, Navy desig. TV-1 and 2; C-121A, military transport version of model 749; C-121C, military transport version of model 1049; WV-1, Navy radar search version of model 749; R7V-1 and 2, Navy transport version of model 1049.

Glenn L. Martin Co., Baltimore, Md. Martin 404, 40-passenger, twin-engine commercial transport; XB-51, USAF three-jet tactical bomber; B-57A, light twin-jet bomber (British Canberra); P5M-1, Navy twin-engine flying boat; P4M-1 Mercator, two-piston and two-jet engine land patrol bomber (no longer produced); Viking, large military research rocket.

McCulloch Motors Corp., 9775 Airport Blvd., Los Angeles, Calif. Model MC-4, twin tandem rotor, 2-place helicopter.

McDonnell Aircraft Corp., St. Louis 3, Mo. XF-88 Voodoo, USAF two-jet penetration fighter; F2H-2 & 3 Banshee, two-jet Navy fighters; XF3H-1 Demon, experimental jet fighter; XHJD-1, twin lateral rotor helicopter; Model 38, "Little Henry," small jet-powered helicopter.

Meyers Aircraft Co., Tecumseh, Mich. Model 145, two-place all-metal, low-wing personal plane.

Mooney Aircraft, Inc., Airport P.O. Box 3012, Wichita, Kans. M-18C & M-18L, single-place, low-wing lightplanes.

Snazzy ACE CONVERTIBLE

All the Beauty of a Real Car!

Simplified Parts EASY TO BUILD

A snappy job, authentic in all details with complete parts, mostly ready shaped. Simple plans make easy assembly for either beginner or expert. Buy a kit now — build this realistic scale model Convertible — paint it your favorite color. You'll love it!

ACE "CONVERTIBLE" KIT No. 15R

AT ALL MODEL AND HOBBY SHOPS

$1 COMPLETE KIT

of course there's a PERFECT TANK to suit your model needs . . . just visit your hobby dealer and see the PERFECT TANKS on display!

insist on genuine PERFECT TANKS for 'perfect' results!

ACCEPT NO *INFERIOR* SUBSTITUTES!

North American Aviation, Inc., Los Angeles International Airport, Los Angeles, Calif. F-86D, E, F, and H Sabre, AF jet fighters; B-45 Tornado, four-jet bomber and reconnaissance aircraft; T-28 trainer; AJ-1 Savage, Navy attack bomber, two piston engines and one jet; F2J, Navy version of F-86E.

Northrop Aircraft, Inc., Hawthorne, Calif. F-89 Scorpion, USAF all weather two-jet fighter; C-125 Raider, three engine cargo transport; X-4, high-speed research monoplane.

Piasecki Helicopter Corp., Morton, Pa. HUP-1 and 2, Navy utility and rescue helicopters; HRP-2, Navy helicopter; H-25A, Army utility; H-21A, USAF rescue; H-21B, USAF assault; H-21C, USAF transport. In development: XH-16, very large transport helicopter.

Piper Aircraft Corp., Lock Haven, Pa. Cub and Super Cub lightplanes, 2-place, 65 to 125 hp; Pacer, 4-place lightplane; L-21, military liaison, version of 125 hp Super Cub.

Republic Aviation Corp., Farmingdale, L.I., N. Y. F-84E, F and G Thunderjets, USAF jet fighters; XF-91, experimental jet fighter.

Ryan Aeronautical Co., San Diego, Calif. L-17, liaison and light military transport, version of Navion.

Schweizer Aircraft Corp., Elmira, N. Y. SGS-1-23, all-metal high-performance single-place sailplane.

Seibel Helicopter Co., Wichita, Kans. Model S4A and B, two-place helicopters.

Sikorsky Aircraft Division, United Aircraft Corp., Bridgeport, Conn. HO5S, U. S. Navy, H-18, USAF, 3-4 place helicopters, civilian version S-52; HO4S, U.S. Navy, HRS-1, U.S. Marines, H-19, USAF and U.S. Army, 10-12 place, civilian version S-55.

Taylorcraft Inc., Conway, Pa. Two and four-place lightplanes.

Texas Engineering & Manufacturing Co., Dallas 2, Texas. Temco T-35 Buckaroo, military trainer and armed liaison.

Chance Vought Aircraft Division, United Aircraft Corp., Dallas, Texas. F4U and AU Corsair, U.S. Navy fighter and attack plane; F7U-3 Cutlass, twin-jet Navy fighter.

Western

(*Continued from page 60*)

glances at the Individual Overall Point Champions he can readily understand why Alameda scored so high. High Point Champion was Eugene Stiles, holder of a world's record; Jack Friedland was runner up; further down the list we find, Herm Shiman, Kevin Terry, Herm Albright, and William Ward. Exactly half of the high-point ten belonged to the Alameda Club. Really hot.

A glance at the increased number of beginner flights made in the past two years will still the doubt in anyone's mind that activity is dying. They made almost twice as many beginner flights in the last six months of 1951 than were made in the first six months of 1950. Each succeeding six-month period has shown a substantial increase, so it's easy to see that their program of encouraging the newcomer is really going great guns.

The Tucson contest proved to be even better than expected. Roy and Edith Downs along with Mrs. George Mueller put on a meet that will long be remembered. Vern Walters started off the Southern hospitality by arranging sleeping accommodations for eight weary contestants, which in itself was no easy job since it was at the height of the resort season, convention time and everything else that takes up rooms. Of course, with nothing else to do we had to have a big bull session Saturday night at George Mueller's, especially after we heard about his new Class A record of 131 plus miles-per-hour.

This ship proved to be the same design which we saw do 128 at the All Westerns. Torp .19, balloon tank, semi-pan, metal wing. The only difference we noted was the lead-out wire, coming out of the leading

don't be fooled! Insist on the Best — Genuine Solid Scale Display Models

AUTHENTI-CARVED SOLIDS BY ENTERPRISE

blue ribbon MIG

ADVERTISED IN LIFE

LARGE SIZE EXACT 1/4" SCALE!

- Completely Carved Bodies—Not Just Shaped!
- Each Kit Complete with Necessary Plastic Molded Parts and Molded Canopy—NO EXTRA JUNK!
- Truly Your BEST BUY At ANY Price!

only $1.00 each plus 20c by mail

No crackerjack prizes included—just real solid value: Beautiful Authenti-Carved fuselages; Razor-Cut wings and tail surfaces; full color accurate decal markings; exact scale plans, PLUS airbrush exploded drawing and GENUINE INJECTION MOLDED PLASTIC NOSES, PROPS and CRYSTAL CLEAR CANOPIES!

F-51 "MUSTANG"

F-86 "SABRE-JET"

P-40 "WARHAWK"

"TOWLINE TERROR" Completely Prefabricated Kit ALL parts razor cut to shape, notched, ready to assemble! Only $1.00 plus 20c by mail

"SHADOW" Semi-Scale Free-Flight .045 to .09 Displacement 32" Span — Pre-Fabricated $1.95 plus 15c by mail

Free-Flight "CHAMPION 36" 36" Wingspan, 202 sq. in. For .045 to .099 Engines $2.50 plus 20c by mail

CONTROLINE

"BABY-ERA" 18" Span Controline .045 to .09 Engines $2.50 plus 20¢ by mail

"THE SKY-LEADER" 18" Span Controline .045 to .09 Engines $2.50 plus 20¢ by mail

"KNOCK-OUT" 18" Span Controline .045 to .09 Engines $2.50 plus 20¢ by mail

"BABY-ERA BIPE" 16" Span Controline .045 to .09 Engines $2.50 plus 20¢ by mail

"SUPER KNOCK-OUT" 24" Wingspan—.09 to .29 Engines

The "SUPER KNOCK-OUT" is an enlarged version of the famous "Knock-out," with slight changes in moments and tail design for greater STUNTING ABILITY! The design, materials and prefabrication methods are unbeatable...

Only $3.50 plus 25c by mail

ENTERPRISE MODEL AIRCRAFT AND SUPPLY CO. INC.
5107 AVENUE D DEPT. AT-52 BROOKLYN 3, N. Y.

CLEVELAND

Tops in Jets!

VOUGHT CUTLASS (ABOVE) — OTHER "SIMPLEX" KITS:

EACH $1

- LOCKHEED F-90
- McDONNELL BANSHEE
- RUSSIAN MIG-15
- THE PIPER CUB
- VOUGHT CORSAIR

—and—

Tops in Scale

1" SCALE

BOEING P-26A (ABOVE) $6.95

GT. LAKES TRAINER.... $5.95

—and—

Tops in Prefab

EACH 59c

THE GREAT "QUICKY" SETS:

LUSC. SEDAN (ABOVE) • F-86 SABRE • BONANZA • SILVAIRE • PIPER CUB • AERONCA

WHEN ORDERING BY MAIL (If your dealer is out of stock). Minimum order is $2. Include 35c pack-post to all orders up to $3.50 — over $3.50 add 10%. No COD's. Foreign customers add 10% in addition to pack-post charges. Ohioans add 3% Sales Tax. SEND 5c FOR LATEST AIRPLANE CIRCULAR.

CLEVELAND MODEL & SUPPLY CO.

4508E2 Lorain Ave., Cleveland 2, Ohio

edge so that the ship would be flying in the circle, not out of it.

The contest was well attended, with over 200 entries posted. Represented were El Paso, Phoenix, and San Diego, as well as a lot of smaller towns. The day was what the doctor ordered, bright and sunny with little wind. Maximum times were posted up to the close of the meet.

Top flyer by far was S. S. Hackenberg of El Paso, who nearly won every event in free flight gas. He won Half-A, B and C, all with very good times, and placed third in the combined rubber-towline event.

George Mueller won both speed events, closely pressed in each case by Jim Nightengale. These two guys are in a class by themselves, both for their flying and their method of operation. George never touches the fuel, Jim supplying him with just the right mixture as required by the weather and engine. One thing George always remembers, though, is that without Jim those ships just wouldn't go, and go they do.

Jim McElroy had all kinds of trouble and didn't clock in a flight. All he could say when asked what happened was that he had one of those days when nothing worked.

On the stunt side we had the opportunity to do the judging for appearance points along with Denny Davis, and couldn't help but judge as top ship Bob Palmer's design which he calls "Mars" and which was built by Doug Spreng. The only reason the ship wasn't far in front of the pack was that Doug didn't have his AMA license on the model, so points were docked.

The ship is mighty purty, featuring wellfaired cheek cowls, planked and silked construction, a tricycle gear, full bubble canopy, with pilot, directional radio and radar gear, all simulated, of course. Real nice job of design by Bob and a super job of construction by Doug. Yes, it flies.

Bob won the stunt event with 390 points followed by Doug with 350 points, then came Dennis Alford with 342 points.. We shudder to think what the results would have been if Bill Alford had had the time to build Dennis one of his usual sweet jobs. Dennis received only 42 points for appearance. It would have been mighty close.

The gliders and rubber jobs were going hot and heavy. Bob Brawner flew his Natswinning El Lobo to first again, setting a new record of 19:29. We were second with 9:57, flying El Lobo II.

The towline-rubber combined event was nicely figured out so that a good towliner would stay in sight longer, even though its average time is much lower and since contests are won on thermals all one has to do is pick his time. Our El Sobo which was redesigned for tow stability after the Nats romped home first with a 21:07 total—30-some-odd seconds shy of the record. A wind shift during the first tow and a short fuse stopped it from breaking the record. With a six minute contest limit, total time was 14:09.

Ed Bollin, who also won two speed trophies, came in second with an excellent 11:38 total, with that man from El Paso, S. S. Hackenberg, third.

Jack Lee had designed a new Half-A payload model which flew so well that he entered it in regular Half-A and won second; a sweet-flying ship.

All in all it was a real pleasure to attend such a contest. Mrs. George, Edith and Ray really gave us plenty to talk about from the way they put on that meet.

The "Thermal Hook" is out again and advises us of the fiendish activity going on at the Sepulveda Basin; three clubs hold monthly contests there which makes it a very busy place.

The Hi-Tailers are running contests as a free-for-all on a ratio system. There is a five-minute max. on the flights with a five-second minimum on the engine, making a possible ratio of 60 to 1 perfect. We are wondering who will accomplish this first.

Swaney in his "Gossip and Nonsense" column states that Jack Oxley had to have a ship which would be bigger than Bill Daniels' "Gool," so he built one which was a nine foot one inch original (Sailplane) with an Orwick .65. . . . Swaney states that Roy Newman went off the deep end and got married. He says that's like flying without a dethermalizer—you can't win.

At the San Diego Aeroneers "Jim Walker —No Rules" contest, Harold Leddington proved he knew his ship best when he amassed 286 points for first place. Richard Potts won the youngest contestant award as well as third place. George Barker is still trying to find out what his ship will do. For some reason or another it will do either 6 or 60 laps, whichever way it makes up its mind.

The regular Team Race meet proved a little monotonous to Keith Storey when the prizes were awarded: he won as many trophies as is possible at one of these contests. The only event wherein he didn't flash home the winner was the 140 lap race, when he broke a needle valve. Some of the events were very closely contested, winning margins being as little as a foot. Paul White had a new job, very light, short coupled, low

HAW-KI

HOBBY SUPPLY CO.

WHOLESALE ONLY

ALL NATIONALLY ADVERTISED MAKES

★ MODEL AIRPLANES
★ RACE CARS
★ RAILROAD EQPT.
★ CRAFTS AND TOYS

WRITE

Today on your business letterhead for current catalog.

PROMPT SPEEDY DELIVERY

HAW-KI HOBBY SUPPLY CO.

DEPT. AT-3 523 WEST 4TH

Davenport, Iowa

25% OFF

ALL NEW MOTORS!

Send us your old motor and claim this terrific trade-in allowance!

One trade-in (any make, any condition) accepted on each new motor ordered.

ATWOOD WASP U.C.	$ 6.50	K & B INFANT .02	$ 4.95	O. K. CUB .074	$ 5.95
ATWOOD WASP F.F.	6.75	K & B TORP. JNR. .035	4.95	O. K. CUB .074 COMBO	6.75
BABY MAC .049	5.95	K & B TORPEDO .049	5.95	O. K. CUB .099	6.95
BABY SPITFIRE .045	5.45	K & B GLO-TORP. .19	12.95	O. K. CUB .099 COMBO	6.75
BABY SPITFIRE .045 COMBO	5.95	K & B GLO-TORP. .29	14.95	O. K. BANTAM .199	9.95
BLUESTREAK .65	23.90	K & B GLO-TORP. .22	14.95	O. K. MONAWK .29	9.95
BLUESTREAK .65 IGN.	25.90	McCOY .09	7.95	O. K. HOTHEAD .29	10.95
DOOLING .29	14.95	McCOY .19	9.95	O. K. SUPER .60	11.95
DYNAJET RED HEAD	35.00	McCOY .29	11.95	O. K. TWIN 1.20	55.00
E.D. BEE .06 DIESEL	8.95	MILLS .045 DIESEL	10.95	ORWICK .29	21.50
E.D. .15 B.B. DIESEL	12.95	MILLS .08 DIESEL	13.95	ORWICK .64	27.50
ELF TWIN .198	21.50	OHLSSON .19	11.95	ROYAL SPITFIRE .065	7.95
ELF TWIN .198 IGN.	24.50	OHLSSON .23	11.95	SPITFIRE .645	24.95
ELF FOUR .396	45.50	OHLSSON .29	13.95	SPITZY JNR. .045	4.45
ELF FOUR .396 IGN.	49.50	OHLSSON .33	12.95	SPITZY SNR. .045	5.45
FORSTER G .29	14.25	OHLSSON .60	12.95	SUPER CYCLONE .604	12.95
FORSTER G .31	14.25	O. K. CUB .039	4.95	TRIUMPH .49	14.95
FOX .29	14.95	O. K. CUB .049 KIT	4.95	TRIUMPH .51	14.95
FOX .35	14.95	O. K. CUB .049	5.25	WASP TWIN .60	29.50
FOX .39	29.95	O. K. CUB .049 COMBO	5.75	VECO .31	14.95

FREE! 12 matched propellers included absolutely free with every motor purchased at the full regular price.

RADIO CONTROL

Vernon MacNabb Citizenship Transmitter, Receiver and Self-Neutralizing Escapement. $79.65

E. D. Transmitter, Receiver and Self-Neutralizing Escapement $39.95

ALL TUBES INCLUDED

FREE! Brand new Fox 35 (Regular $14.95 value) plus matched propeller included absolutely free with every radio control purchase.

These offers available only from:

ALL AMERICAN MODEL MOTOR EXCHANGE

DEPT. A, BOX 885, SANTA MONICA, CALIF.

aspect ratio, which proved the fastest ship on the field until the wings folded in flight—just a little too light.

Cliff Potts, the perennial winner, was supposed to be CD, but fell in love with the mike on the P.A. system, so Les MacBrayer ended up as starter-contest director. A real bang-up job was done by Les; he allowed three San Diego and one Pasedena entry in the ten-mile event.

Quite a few fellows have built swept-wing racers since Jezebel came out in AT. George Barker built one to the plans. Charley Young modified one for a Torp .19, and Cliff Potts built one around his old design. Cliff's is the only one left. George's had the habit of walking into the circle on take-off. During one race with three other guys in the circle he had to throw away the lines to keep from wrapping up said guys; the telephone poles laid around the circle stopped it. Charley Young decked his. Cliff's is flying merrily along.

This meeting proved to be the end for no less than five models due to unavoidable accidents, so there will be some fiendish activity to build new ones. . . . .

Definition of a "Fubar" is "Okie Hogan," according to the California flyers.

Dope Can

(*Continued from page 54*)

Compressed air at 60 psi is fed from a control valve held in the operator's hand, through an aluminum tube about ten feet long, to the hub of the rotor. It then passes through flexible rubber hose and through an aluminum tube that forms the leading edge of the rotors, to the tips where it is forced out of small jet orifices.

This is the twentieth model to be built in the course of research at Kaman; the others were powered by a small piston engine, CO_2, and an electric motor. Before coming to Kaman, Mr. Benson was engaged in rotary wing research at General Electric, and is an accomplished helicopter pilot.

The California Gold Rush will have nothing on the 1952 trek of the serious aeromodeler—for the word is out: The National meet will be held on the West Coast this year.

In a modest little announcement, the A.M.A. made an historic deviation from the usual "Eastern" or "Midwestern" Nationals. The release reads, "The Academy of Model Aeronautics announces the approval of the Naval Air Station, Los Alamitos, Calif., by The National Exchange Club, Navy and A.M.A. Contest Board as the site for the 1952 National Model Airplane Championship Contest to be held during the last week in July. Los Alamitos is near Los Angeles."

This will be the first time the big meet has been any farther West than Dallas, Texas. Although the Western enthusiasts have been claiming for years that they have been discriminated against, it required the joint efforts of the Navy and Exchange to lift the big battle over the Rocky Mountains and onto the sunny slopes of the Pacific Coast.

It is the plan of the Exchange people working in cooperation with the Navy to conduct the Nationals in the West this year, on the East Coast in '53 and in the Midwest in '54. Reasoning behind all this is that by so doing the "regional" modeler has one chance in three to attend a Nationals, whereas always in the Midwest means 2/3rds of the fans never get to 'em.

Dick Everett sends a flash that John Bollinger has been tapped for the job of contest director. Bob Holland is scheduled to handle the indoor flying, Russ Johnson—rubber and gliders, Dick Schumacher—radio control, Keith Storey—U-control. Everett has been invited to look after the free flight gas categories. The indoor meet will be run off at Santa Ana where there is a hangar with 135 feet of usable flying height. All the outdoor flying will be at the Los Alamitos naval base. Dick says that's pronounced "Los" as in *lost*, Ala—as in *allah*, mit—as in *meat*, os—as *tomatoes*.

Flying Scale or Stunting Scale? The pot continues to boil furiously over that points-for-stunts part of flying scale U-Control competition. Most of the scale boys we've run into lately think it's for the birds unless scale is divided into two categories; 1) straight scale with a minimum qualifying flight and 2) stunting scale.

Lt. Richard Atkins, USAF, and a member of the Sutton Air Kaydets of Beaumont, Texas, presented the case pretty strongly for his fellow Texan scale flyers. They all like to make a scale model that's really scale, has lots of good finish and many fine scale details. Dick flies a B-26 (Douglas, not Martin) twin-engine model with cockpit details. He's lost out several times to "minimum-type" scale models that were

(*Continued on page 67*)

Airlines use Speed-O-Laq . . .

NORTHWEST AIRLINES

EASTERN AIRLINES

MID-CONTINENT AIRLINES

because they insist on the Best!

DO YOU? Get SPEED-O-LAQ for your model plane and you get the same high quality performance enjoyed by the airlines! SPEED-O-LAQ Dope fulfills *every* model aircraft requirement . . . and then some! Airlines that insist on the *best* use SPEED-O-LAQ Dope under flight. It's the only complete line of authentic colors.

10¢

Ask for SPEED-O-LAQ Cement, too!
At your hobby counter

SPEED-O-LAQ
FLIGHT TESTED
MODEL AIRCRAFT DOPE

SPEED-O-LAQ PRODUCTS CO., INC.
2386 Wycliff St., St. Paul 4, Minn.

CANADA'S LARGEST HOBBY SUPPLIERS

CANADIAN HEADQUARTERS FOR

Power Units
Fuel
Wicks
Accessories

JETEX

Kits for Jetex
Power Units
Ready to Run
Boats & Race Cars

Dealer inquiries solicited

MODEL CRAFT HOBBIES LTD.
66 WELLINGTON ST., WEST, Dept. 121
TORONTO, ONTARIO, CANADA

RELAX WITH A GOOD MYSTERY

Listen to

The Shadow
True Detective Mysteries
The Green Hornet
Nick Carter
Under Arrest
Affairs of Peter Salem
Crime Does Not Pay
Crime Fighters
The Black Museum
Official Detective
Mysterious Traveler
I Love A Mystery

ON YOUR MUTUAL STATION

All April long Street & Smith Publications and your newsdealer are cooperating with the Mutual Broadcasting System and its 550 Stations to celebrate

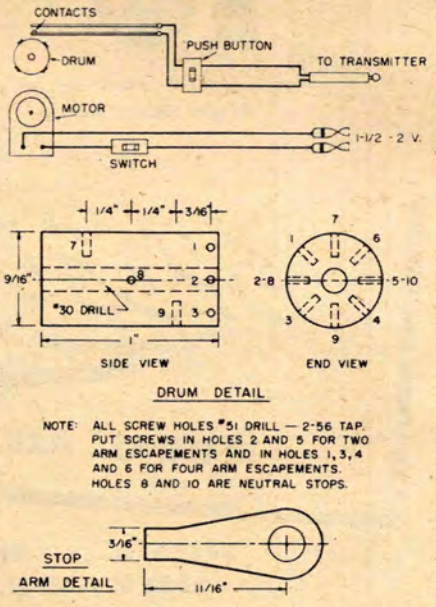
MAGAZINE MONTH

ENJOY GOOD READING

in a Street & Smith Magazine—Mysteries on your Mutual stations.

The Mystery of the Missing Beep Box . . .

■ In last issue we suggested that you "Build Yourself a Beep Box" but neglected to include these drawings. One of those inexplicable things that plague editors and printers . . .



improved design...
Lightweight
SMOOTH POWER
finest of all
FORSTER ENGINES
Write for Specifications
FORSTER BROTHERS
82 E. Lanark Ave., LANARK, ILL.

"AT" Plans

552—Galloping Comedian stunt; Dart Kitten U/C scale; Curtiss Racer free flight scale.

ATA 521—Fokker Triplane control line; B-36 solid 14 inch; Ole Slippery team racer; Horton IV scale towline; Little Senator free flight; Bienenstein's Mulvihill Trophy rubber model.

ATA 522—North American AT-6 control line; Bristol Bullet rubber scale; Dunham's All-American rubber cabin model.

ATA 523—Happy Medium free flight; Executive twin Jetex semi-scale; Double Whammy U/C stunt.

452—Don Still's Stuka Stunt model; Thomas-Morse control line scale; Hall-Massey speed models.

352—Air Force Champion team racer Chow Hound .29 eng.; Consolidated PB-2a U/C scale; Ehling's National Half-A PAA-Load winner; Grzesczak's PAA-Cargo free flight Half-A.

252—Batiri free flight; Everitt's Wakefield; Bonnie Lass Half-A team racer; Combateer combat model; Half-A Helicopter.

152—Chester Racer; Hot Canary; K. C. Cutie.

1251—Bourgeois' Jezebel team racer; Storey-Willard Korker; deBolt's Half-A Twin.

1151—Douglas Mailplane; F/F Glutton; Half-A Stunt Chum; ROG-ROW combo sport F/F.

1051—Rumpler Taube; The Fling; Dummy Lifter.

851—Screamin' Demon speed job; Nordic towline glider; Jetex Opel.

751—Stunt Rocket U-control stunt; Flying Wing F/F; Skylark combo parts.

551—Fleet U-control scale; balsa glidér trio; Clipper Chisal PAA-Load.

451—AT Interceptor; PAA Cargo Carrier; Whee-38.

351—Matthews' Crowbar PAA-Loader F/F; Beck's Petite Pete A/2'er; Ehling's Wakefield.

Air Trails Plan Service
304 East 45th St., New York 17, N. Y.
I enclose 35c for each plan listed:

List by number .....

Name (print) .....

Address .....

City-Zone-State (AT-552)

(*Continued from page 65*)

entirely lacking in finish or details, but which could do the full stunt pattern.

Like many other scale builders, Atkins doesn't blame the fellow who picks a design capable of good stunt work. Dick (and there are thousands who agree with him) says it's the fault of the rules. Well, maybe somebody will get around to doing something about them one of these days.

In the meantime, we can expect some good, fair judging of scale at the California Nationals since so much scale work is done the year around out there.

You Gottum Firebaby? Jim Walker had us on the phone the other day. Seems like purchasers of his ready-to-roar-'round-the-circle Firebabies are not being told that all these peppy little craft come packed in a nifty box which includes washers for use with the glow plug in case the engine is hard to start. We're sure everyone is familiar with the Firebaby: ready-to-fly Half-A control line craft—just slip the wing in place, etc. Well, a novice may find that the small high-compression glow plug engine with which the Firebaby is equipped is hard to start. That's what the washers are for, says Jim. Slip one or two of these washers under the glow plug (first take out the plug, put washers on bottom of plug and replace plug in engine head) and you'll find that decreases compression and makes the engine easier to start. After the engine is thoroughly broken in you can remove the washers one-by-one.

All very simple, as Jim says. So don't throw out the packet of washers you'll find in the Firebaby box—they're there for a purpose. Pass the word along—particularly to your dealer who'll certainly thank you if he hasn't discovered the compression-decreasers by now.

The Contest Calendar. Although it's snowing the very moment we write this in New York we can feel Spring is just around the corner by the deluge of contest notices that have been swamping us. So as is usual at this time of the year we set up our Contest Calendar and will run it all through the competition season. All you club secretaries and meet directors are cordially invited to send in your contest announcements; just remember to have them in our hands at least 90 days before the competition date in order to have them published *in time to do you and the club any good.*

Club Chatter. Change of address comes in for the Montreal Sleepless Knights. The new president is Cliff Morris, 2166 Demaricourt St. That's Quebec, Canada, you realize. The MSK model flyers were working on plans to charter two buses so all could attend the Mirror Meet on Long Island. Last year they came down in a single vehicle. The Sleepless Knights' secretary is Bill Elliott, 2083 Bleury St., Apt. 1, who is always glad to hear from other clubs as well as prospective members.

In conjunction with the Verdun Optimist Club the MSK's are planning a meet for July 13. They're hoping for the biggest contest ever held in that section of Canada.

Ford R. Mack of 39 Lyon St., Bath, N. Y., tells us that he was reelected president of the Prop Busters there. Bernie Zawrotny (if we read Mr. Mack's writing correctly—no easy task!) is once again secretary-treasurer. The club prides itself on a minimum of formality and officers. Indoor flying of the non-microfilm style is enjoyed by the group. The Prop Busters requested that nearby organizations advise them of forthcoming meets.

Got any dope on the Curtiss Hawk P-6E? The Sabine Area Model Club, sponsored by the Exchange Club of Beaumont, Texas, is embarking on a club project—building one of those bipes. We assume it's gonna be a big one, mebby R/C? E. D. Patterson, SAMC pres at 2171 Pecos, would appreciate info.

Joe Meckoll of 3971 W. 9th St., Los Angeles 19, Calif., reports that changing times have caught him with a large stock of back Air Trails and model engines and kits (mostly free flight) and with no time to build. His 18 or 20 engines are supposed to be in good shape. The old "AT's" can be had for the freight bill, sez he. "The engines and kits free to deserving fellows or if someone wants a great deal of the material, I'm now a camera fan and will haggle a trade for camera stuff."—that's Joe speaking. Tally-ho!

Gerald Denofsky, 9608 Stahelin, Detroit 28, Mich., says he and his buddies have formed a modelplane club. Add this to your list. No name given.

Old Timers You'd Like to See? We were talking with Ed Pachasa of Cleveland Model & Supply Co. who indicated the concern would like to hear from modelers regarding any old-time kit models you'd like to see re-issued by C-D. Declared EP: "You might mention that we are inquiring of builders about the types of old-timers they might wish us to re-issue and what classi-

TOP FLITE MODELS INC.

Here's Proof! MORE CHAMPS at '51 Nats. USED TOP FLITES and POWER PROPS than all other makes combined!

Michael Cook
Glendale, Ohio
PAA Load, Cl. AB
Ohlsson 29
11-4 Top Flite

Juel Clevenger
Kansas City, Mo.
Control Line-Flying
Scale-Sr. Atwood 49
10-8 Top Flite

Bob Ottoman
Medford, Oregon
Open Free Flight
Gas Cl.C, Torp 32
10-6 Top Flite

Jimmy McCroskey
Iredel, Texas
Control Line-Flying
Scale Jr. KN8-32
9-6 Top Flite

Bill Lofland
Abilene, Texas
Free Flight Gas
ROW Jr., Veco 29
9½-6 Power Prop

Clifford Schaible
Roselle Pk., N. J.
Navy Radio Control
Bomb. Open. McCoy 19
9-6 Top Flite

Don Murray
West Point, Ga.
Free Flight Gas
Cl. C Sr., Triumph 49
11-6 Top Flite

Ernie Shailor
Detroit, Mich.
Free Flight Gas
Cl. B, Open, Forster 29
10-3½ Top Flite

Curtis Franke
San Antonio, Texas
Free Flight Gas
Cl. C, Jr., Torp 32
11-6 Top Flite

Tommy Davis
Atlanta, Ga.
Control Line
Spd. Cl.A, Jr. McCoy 19
7-9 Power Prop.

Don Tune
Los Angeles, Cal.
Cl. AA Junior, Free Fl.
Torp: .049
6-4 Power Prop

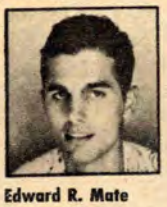
Lou J. Andrews
Norwood, Mass.
Open Stunt
Fox 35
10-6 Top Flite

Don Ferguson Jr.
Newtonville Mass.
Senior Stunt
Fox 35
10-6 Top Flite

Jack McComb
Columbia, Mo.
Sr. Free Flight
Gas Cl.AA, Wasp .049
6-4 Top Flite

Dick Everett
San Diego, Calif.
Open Free Flight
Gas Cl.AA, Torp .049
6-3 Top Flite

Bob Lutker
Ft. Worth, Texas
Open-Team Racing
K&B 29
9-9 Power Prop



Edward R. Mate
Chicago, Illinois
Free Flight Gas
ROW Sr. OK Cub 09
7-4 Top Flite

Chief J. K. Abbott
Corpus Christi, Texas
Control Line-Flying
Scale-Open, McCoy 49
10-6 Top Flite

Herb Kothe
Grand Prairie, Texas
PAA-Load, Open-AB
Torp 29
11-4 Top Flite

Harris Grimes
Atlanta, Georgia
Junior Stunt
Veco 29
10-6 Top Flite

TOP FLITE Models Inc., 2635-45 S. Wabash Avenue, Chicago 16, Illinois

Dealers-Railroad and Engine Parts Catalogs FREE

WRITE FOR YOUR COPIES TODAY

If you already have these books include additional copies in your next order. You're welcome to all you can use as a special service from National. 16 page Model Engine Parts Book, with fuel tank and propeller recommendations and 24 page Railroad Parts Book, both illustrated, give name, number and price of all parts in leading manufacturers lines. Many dealers report the use of these catalogs, along with National's Check List help them please customers and make many additional sales. Write today on your letter head please.

National MODEL DISTRIBUTORS
2516 North Greenview Avenue • Chicago 14

more thrust per r.p.m.

Tornado

nationally famous

PLASTICOTE

PROPS

"not a plastic . . . . . but a plastic coated wood"

HEAT PROOF

FUEL PROOF

Examination will prove! Run your fingers along a TORNADO prop. Feel the smoothest finish ever developed. Look at the perfect air foil section . . . true pitch and extra thin blades—You'll agree, TORNADO props are engineered to deliver the most *thrust* at minimum *torque* for top performance!

For consistent high quality, ask for TORNADO props at your dealer.

GRISH BROS. • ST. JOHN 1, INDIANA

fication of models they would like to see designed."

So if you've got any old favorites drop the Cleveland outfit a postcard. State your preference clearly, concisely. Don't ask for an answer 'cause that'd only delay any possible re-issue work on Cleveland's part.

Limited-flight Flying Scale. Continuing on that flying scale theme, here's some dope on the free flight replica meet scheduled by the Kansas City Mo-Hawks. It's the feeling of that club that scale models should be judged on the basis of scale appearance rather than on their ability to stunt or perform endurance flights. As a result the following rules have been drawn up:

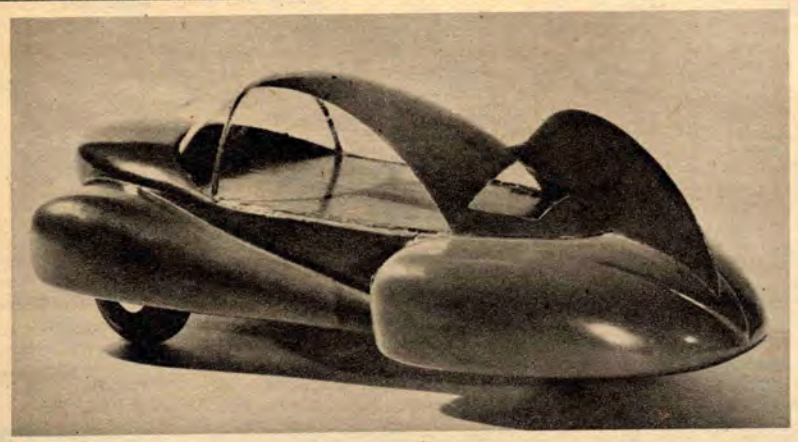
Any size engine permitted. The object is to encourage scale models that will fly in a stable manner. Entries will be awarded points on the basis of fidelity to scale and execution of details as substantiated by photographs and/or acceptable plans. Following the scale judging the planes must complete a successful flight. Additional points will be granted unassisted take-offs. A successful flight is 40 seconds or more with unlimited motor run. Four flight attempts will be permitted.

Bob Swanson is secretary of the Mo-Hawks. He can be reached at 1413 E. 45th St., Kansas City 4, Mo. The first F/F scale affair is scheduled for May 4.

Checking the Mail. Orville (now there's a good name for a model builder) W. Williamson calls San Bruno, Calif., his home but reports he's usually on high with the Pacific air lift flown by California Eastern Airways. He's gotten a bunch of the lads started on R.O.W. flying with Half-A engines at Wake Island. Well, they certainly can't complain about a big enough hydro "tank" at that spot! OWW wanted to know if scale free flight models were flown in most of the big F/F shindigs in a separate event and if not, could they stack up against the regular pylon type contest craft in the standard endurance competition.

Well, Orville, as yet not many of the big meets have added a scale event in free flight, but it's coming mighty fast. As for a scale model competing against a pylon, we've yet to see one that stood a chance—but we'll be watching for the exception.

Port City Buzzards, Muskegon Heights, Mich., wants to know if anyone has movie films available for rental showing how kits are manufactured. None that we know of, fellows. Nearest thing was a Cleveland



Modern Model "Maxwell"

This easily made car-of-the-future will keep "little fingers" off your big models.

By AUBREY KOCHMAN

■ This electrically driven car is my answer to the gift problem for the very young model-minded youngster, and I'm sure it can be yours. It is quite simple to build, stands up well, and most important it can be operated by a simple flick of the switch. The general outlines of the car may be altered to suit your own design or you may choose to build a scale model automobile. In either case keep the weight down in order not to overload the motor.

The plan also shows a simple installation for the Jetex 50 power unit which may be substituted for the electric motor. Bear in mind that if you choose to equip your car with the Jetex 50, the manufacturers of this little power unit caution against it being run indoors.

The car body is carved from medium soft balsa. The piece of ¼" sheet balsa is added to build up the height of the hood. A neat job can be done with the "U" shaped chisel from a linoleum cutting set. Hollow out just enough for the motor so that it is a tight fit, and then a small quantity of cement will be all that is required to hold it in place. The front wheels are steerable and may be so adjusted to turn the car in a very small circle.

The rear wheel is a push fit onto the motor shaft. This can be done by either drilling out the axle hole or filing down the motor shaft.

film showing how to put together elementary models. But John Anderson, 805 Leahy St., would appreciate dope of any available modelplane films from anyone. Right, John?

Short 'n' Sweet. We quote: "The LaSalle-Peru Turf Tearers Model Plane Club holds meetings in La Salle, Ill., every second and fourth Saturday evenings of the month. The rest of the Saturday evenings are spent building. A class of beginners has been started in building and flying control line models. Any interested readers of this magazine contact John Alleman, Tonica, Ill." Unquote.

Robert L. Seaton, Rt. 2, Box 32A, Fredonia, Kans., tells us that he made a deal and acquired a large box of Thor engine parts. Any or all the parts can be had for the postal charges.

This year, as it has in the past, the Chicago Aeronuts will again sponsor the Wakefield Eliminations for the Chicago area. Carl Goldberg has been appointed contest director for the event which will be held on Sunday, May 25th at 82nd and Crawford Ave., Chicago. In addition to the Eliminations a Nordic A/2 event will be held.

The models will be processed and impounded the night before. Flights will be made in three rounds of one hour each, with the first round beginning at sunrise and the other rounds immediately following. On completion of the last Wakefield round the Nordic A/2 flights will begin. Trophies will be awarded for both events. Further info from Frank B. Purdy, 3511 Jackson St., Bellwood, Ill.

We note the Rockford, Ill., Aero Aces have added radio control to their annual contest scheduled for June 15. This reminds us to remind all you R/C'ers to keep after your local CD's to add R/C to the regular contests. Most meet sponsors and directors will be most happy to see some radio flying at their affairs, but sometimes they forget about such things—so it's up to you enthusiasts to keep 'em on the ball. Make sure there's an R/C event in *your* club's contest.

We note that St. Rita's High School in Chicago has a modelplane club. One of the instructors at the school, Joseph V. Callahan (6013 S. Campbell Ave.), needs detailed three-views of the Nieuport 28 and the Curtiss Hawk F11C4. Anybody help?

Wanted: one Knight Twister Junior plan and one American correspondent with U-

(*Continued on page 71*)

AMERICA'S FIRST NEW RAM-JET HELICOPTER

Available for the first time anywhere!—scale model of the new, exciting "Hiller Hornet" designed for Army, Navy and Civilians

$2.98
—the complete kit with display stand. By mail, add 25¢.

The only book of its kind today!

HELICOPTER GUIDE
by "Les" Morris

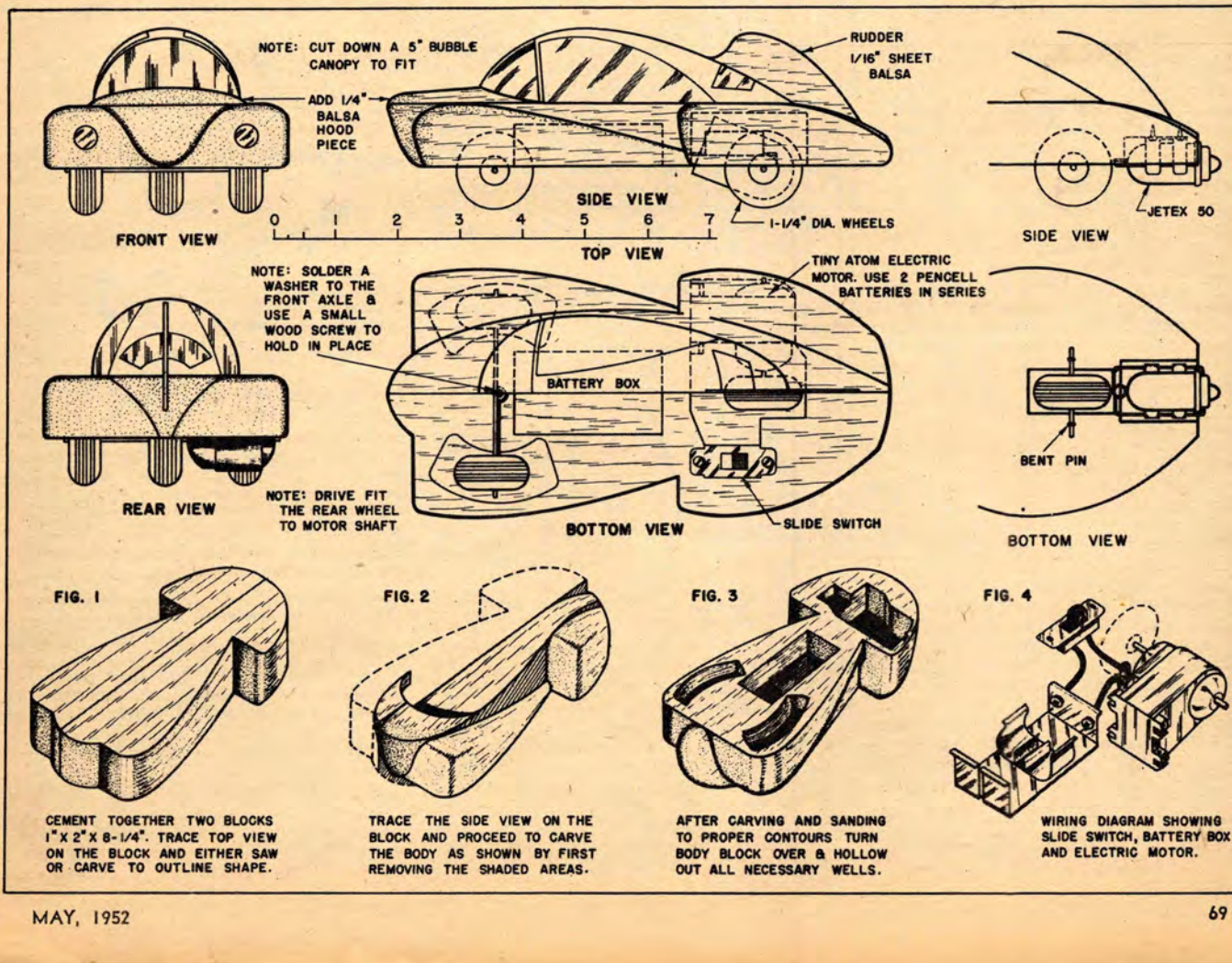
Written by one of America's first and foremost helicopter pilots. Everything you want to know about helicopters is contained in this book. Gives detailed, easy-to-understand instructions and diagrams on how to fly a helicopter. Jam-packed with illustrations and facts.

$2.00 per copy
add 10c for postage & handling

Wins Acclaim of Experts for Authentic Detail. The amazing feats of the fabulous "Hiller Hornet" have been front page news since its introduction. Now, for the first time, you can get this model, precision molded of styrene plastic and scaled to the 10" collector's size. Made in Army olive drab, Navy blue and civilian red with official insignia. Handsomely gift packaged with dramatic 4-color illustration suitable for framing on box cover. A great first for the hobbyist and collector. Order yours today!

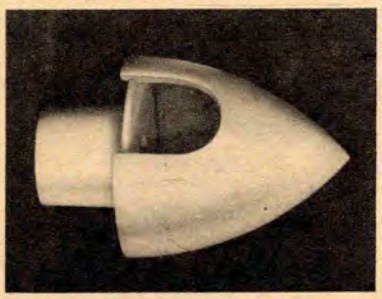
Order from your dealer, or write to us direct. Enclose $2.98 for each model in check or M.O. plus 25c for postage and handling —no C.O.D.'s please. Specify Army, Navy or Civilian model.

HELICOPTERS FOR INDUSTRY INC.
111 Cathedral Ave., Hempstead, New York


NOTE: CUT DOWN A 5" BUBBLE CANOPY TO FIT
ADD 1/4" BALSA HOOD PIECE
RUDDER 1/16" SHEET BALSA
SIDE VIEW
FRONT VIEW
0 1 2 3 4 5 6 7
TOP VIEW
1-1/4" DIA. WHEELS
JETEX 50
SIDE VIEW
NOTE: SOLDER A WASHER TO THE FRONT AXLE & USE A SMALL WOOD SCREW TO HOLD IN PLACE
TINY ATOM ELECTRIC MOTOR. USE 2 PENCELL BATTERIES IN SERIES
BATTERY BOX
REAR VIEW
NOTE: DRIVE FIT THE REAR WHEEL TO MOTOR SHAFT
BOTTOM VIEW
SLIDE SWITCH
BENT PIN
BOTTOM VIEW
FIG. 1
FIG. 2
FIG. 3
FIG. 4
CEMENT TOGETHER TWO BLOCKS 1"X 2"X 8-1/4". TRACE TOP VIEW ON THE BLOCK AND EITHER SAW OR CARVE TO OUTLINE SHAPE.
TRACE THE SIDE VIEW ON THE BLOCK AND PROCEED TO CARVE THE BODY AS SHOWN BY FIRST REMOVING THE SHADED AREAS.
AFTER CARVING AND SANDING TO PROPER CONTOURS TURN BODY BLOCK OVER & HOLLOW OUT ALL NECESSARY WELLS.
WIRING DIAGRAM SHOWING SLIDE SWITCH, BATTERY BOX AND ELECTRIC MOTOR.

the more you clamor for 'em . . . the more you get, so here's . . .

The Latest In Dupont Nylon Accessories



When Dupont nylon accessories were first introduced, we thought it would take at least a year to get the acceptance of leading model builders. And how wrong we were!

Your response to the new accessories of Dupont nylon has been so enthusiastic, we feel we must explain why we can't keep up with your demands for more and more new nylon accessories.

Frankly, we have several dozen new products completely drawn up and tested. Accessories that will have you hollering for even more . . .

Yes, accessories like our amazing new spinner (shown above). Imagine a spinner that you just snap-on, snap-off, a spinner with a positive locking action that is guaranteed not to slip off. PLUS, these spinners are available with extensions (½A-½ inch; 1½ inch-¾ inch). You can imagine what that will mean to choking, adjusting needle valves and engine cowling! And these spinners are realistic!

Or, perhaps you're wondering about our new line of bubble canopies. (These heavy bubbles are not nylon but another clear plastic.) They are sturdy, can be readily used with reverse detail for painting. Yes, these are real bubbles, not an excuse!

So you see, we're working . . . and working hard . . . to produce more and better nylon accessories. But everything has its bottleneck. Ours is dies. Dies are expensive, and they take a long time to make. Our shop capacity does not permit us to make any more dies than we are now making.

But keep your eye on nylon. There are so many new and wonderful things planned to give you better and better accessories that we can't begin to tell you about them.

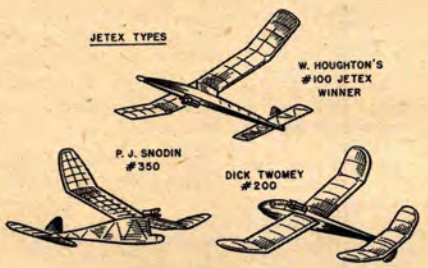
Keep looking and asking for nylon accessories at your dealers'. We are getting them out as fast as we can.

Accessories of Dupont nylon are exclusively made by Sullivan Products, 214 W. Dauphin St., Philadelphia 38, Pa., manufacturers of Pylon Brand wire and accessories.

Advertisement

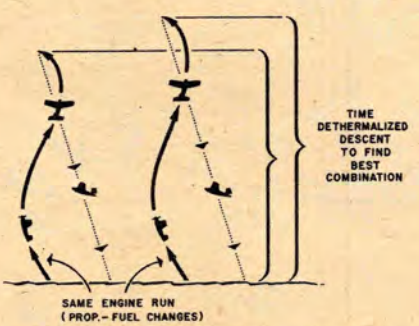
FOREIGN News-Notes

Australian Jim Fullarton, in a comprehensive article dealing with free flight gas model adjusting, cites this key rule: *never use the rudder for power turns.* He adds that resistance to spiraling can be enhanced by generous dihedral and small fin area. His own method of flight trim is unorthodox, however, employing a timer to limit the engine run and at the same time to turn the rudder tab (not over ⅛ inch movement, he warns) for turn in the glide. Fixed adjustments with this system are slight side thrust, partially offset by slight opposite rudder, so that the model follows a constant right turn pattern. Fullarton favors fixing the center of gravity in the beginning and achieving glide trim with incidence packing.



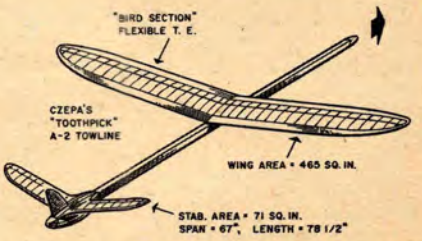
Jetex power is quite popular in England where is was developed. The largest Championship Meet for Jetex-powered models saw 30 finalists flying with durations computed on a ratio basis, "power durations" being set by manufacturer for size of unit used. Of the four sizes, #50, #100, #200 and #350, the eventual winner was #100-powered, a lightly built conventional model designed by W. Houghton, his best duration being 3 min., 4 sec.

New South Wales plays host to the Australian Nats this year. Location is



an aerodrome at Camden, near Sydney. A five-day affair, the meet is to have full cooperation of the R.A.A.F., including housing for contestants. In lieu of presentation dinner, an outdoor barbecue is planned.

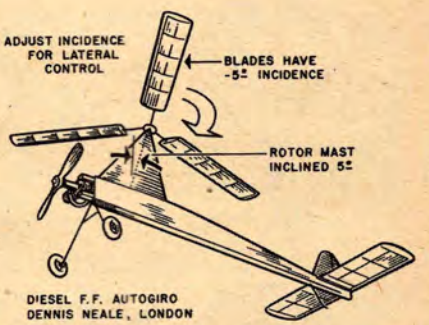
Among many capable modelers "down under" are Harold Stevenson who, with Bill Marden, builds the MS29 engine and who excels in speed and team racing; Wally Judd, stunt whiz; Max Wright, who flies fast with Vampire engines of his own manufacture; and A. G. Hull, Herb Hanke and Norm Bell. Our correspondent, Jack Finneran,



a last year's speed winner, is approaching 130 mph with his Dooling .29 model, which means he may repeat.

Bill Dean, English modeler and writer, outlines a clever test procedure for finding best prop-fuel combination. He sets engine timer for 20 seconds, the dethermalizer for 21 seconds. Since rate of descent is virtually constant with dethermalizer, he simply times the descent during tests—the longest descent indicating the highest climb. Just that simple. . . .

Austrian "Toothpick," winning Half-A towline design of Oscar Czepa, is indica-



tive of the high level of original model design now seen in continental Europe. Czepa placed his small required fuselage cross section at the *tail* to gain line stability, and found that by increasing tail moment arm to from five to seven times wing chord he could reduce stabilizer area to a slight one-eighth of wing area! These design features plus fine workmanship and trimming know-how enabled him to defeat some 40 finalists of 11 lands.

British "Aermodeller" magazine has compiled interesting individual contest records, computed on an annual basis. In rubber category, top man was J. Gorman, who entered seven meets, completed 19 of 20 possible flights for an average of four minutes each. High glider man was P. Jacobs who, in three meets, got in all of eight possible flights and averaged 3 min., 37 sec. Norman Butcher, top power contestant, averaged 4 min., 23 sec., in five of five possible flights. (*Cont'd on page* 73)

(*Continued from page 69*)

control interests—Helio Choihet, Avenida Brigadeiro Luiz, Antonio 1665, San Paulo, Brazil.

News from Georgia. We had a rough time with some gentlemen from Georgia last summer. They said we'd been purposely neglecting the South! Naturally, Suh, we denied that canard. We finally convinced them all if the news arrived in usable form we'd be delighted—*delighted*—to print it. Now the Georgia Congress of Model Airplane Clubs really came through in grand style, thanks to R. H. Elliott, contest coordinator for the A.M.A. fifth district. Bob advises that the Arthur Godfrey perpetual trophy has stirred up some real interest in the South. Top recognition was accorded the Southeastern Class AAA regional meet last summer when funnyman Godfrey put up a $500, 4-foot perpetual award for annual competition.

At the '51 Southeastern contest the award went to the best man in stunt-scale for the preceding 12 months in meets throughout the South. Speed and jet abilities will be recognized in the awarding this summer; then in the '52-'53 flying year the trophy will go to the best free flight-radio control contestant; then the following season it goes to the best outdoor rubber and glider contender. Quite a schedule and a very fair one. Competition is limited to registered flyers in the 5th A.M.A. district.

Backed by the GCMAC and the Atlanta Exchange Club, a series of monthly interclub contests has been staged since last September. Host clubs sponsor the type of

CONTEST CALENDAR

Meet directors are invited to list forthcoming competitions in this column. Advise Air Trails 90 days in advance to do the most good for your meet. If any area restrictions on entries, be sure to state. Address of contact man is same city as site of meet unless otherwise specified.

April 13—Lubbock, Tex., Texas Eagles' record trials. Paul Gilliam, 1719 Bdwy.

April 20 or 27—Weymouth, Mass., Eastern indoor record trials. E. G. Dolby, 33 Exchange St., Rockland, Mass.

April 27—Baltimore, Md., radio control meet. J. F. Snyder, 3107 Normount Ave.

May 4—Kansas City, Mo., Mo-Hawks' Half-A scale contest. Robert Swanson, 1413 E. 45th St.

May 4—Easton, Pa., Model Airplane Doctors' record trials. Joseph Groman, Jr., R.D. #2.

May 4—Taft, Cal., Taft M.A.C. record trials. Francis Stewart, 900-21st St., Bakersfield, Cal.

May 11—Bridgeport, Conn., Aeronuts' radio contest (tentative). Phil D'Ostilio, 47 Cardinal St., Fairfield.

May 18—Willow Grove, Pa., Bucks County Fed. M.A.C. meet (restricted). Frank Horn, 411 E. Newton Rd., Hatboro, Pa.

May 24-25—Boston, Mass., New England Wakefield Eliminations. E. D. Dolby, 33 Exchange St., Rockland, Mass.

May 25—Chicago, Ill., Midwest Wakefield Eliminations and Nordic A/2 contest. F. B. Purdy, 3511 Jackson St., Bellwood, Ill.

May 30—Bristol, Pa., Aeromodeleers Flying Circus. C. F. Wells, 1300 Dixon Ave., Croydon, Pa.

June 1—Cleveland, Ohio, Lake Erie GMC free flight scale meet. Nobby Hobby Shop, 10310 Union Ave.

June 1—Taft, Cal., Taft M.A.C. records trials. Francis Stewart, 900-21st St., Bakersfield, Cal.

June 8—Lexington, Nebr., State Stunt contest. D. R. Ross.

June 8—Bethpage, N. Y., Seventh Mirror Model Flying Fair. Ted Clodius, "N. Y. Mirror," 235 E. 45th St., N.Y.C.

June 14-15—Atlanta, Ga., Southeastern Championships. R. H. Elliott, 639 Brookline St., S.W.

June 15—Rockford, Ill., Aero Aces free flight meet. H. E. Heminger, 836 Diamond Ct.

June 29—Long Island, N. Y., Gas Monkeys' Fifth Annual. E. V. Roff, 56 Stuart Ave., Malverne, N.Y.

July 9-15—Amarillo, AFB, Tex., Air Force World-Wide Championships. Lt. H. A. Vogler, Jr.

July 13—Montreal, Que., Sleepless Knights' meet. Cliff Morris, 2166 Demaricourt St.

July 13—Johnsville, Pa. (tentative), Phila. Plymouth dealers' qualifications and regional meet. Matt Sullivan, 214 W. Dauphin, Phila. 33.

July 26—Portageville, Mo., Rotary-Plymouth meet. W. C. Kroeger, c/o Dorris Motor Co.

July (last week)—Los Alamitos N.A.S., Cal. National Meet.

Aug. 3—Waynesboro, Pa., Exchange meet. J. A. Otter, Rt. 3.

Aug. 3—Cleveland, Ohio, Lake Erie GMC Half-A free flight meet. J. W. Grega, 10422 Gay Ave.

Aug. 3—Minn. & St. Paul, Minn., A.T.C.H.R. PAA-Load meet. W. H. Billett, 2548 Nicollet Ave., Minn.

Aug. 3—Waynesboro, Pa., Exchange-Plymouth U-Control meet. J. A. Otter, Rt. 3.

Aug. 10—Hamburg, N.Y., Cloud Busters' meet. Mrs. Robert Burdick, 108 Maple Ave.

Aug. 10—Dekalb, Ill., Cloud Dusters' Flying Circus. Dutch Hess, 137½ E. Lincoln.

Aug. 20-25—Detroit, Mich., 6th International Plymouth Model Plane Contest.

Aug. 31-Sept. 1—Pawtucket, R. I., 6th All-New England meet. A. C. Bergeron, 55 Ricard St., Seekonk, Mass.

IT'S 52's BIG TALK!

F&B's New WARHAWK

FLYING SCALE TEAM RACING

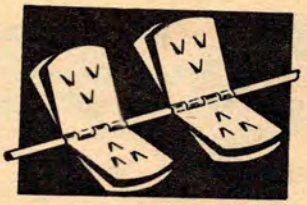
Flying Model—authentically scaled P40F CURTISS WARHAWK. 32½ in. wing span and 156 square in. Crisply die-cut parts; pre-fabricated; Decals; windshield. Completely detailed, full-sized plans. Shaped and notched leading and trailing edge; formed landing gear. CLASS B-C.

$5.95 (By mail add 25c)

VIXEN
Stunt ship for .030 to .065 engines. Wing area 126 sq. ins.; span 21¼ in. Class. ½A..... $1.95

VAMPIRE
40" span, 9" chord, wing area, 360 sq. in. Ready-built fuselage, Class B-C $4.50

VIKING
51" span, 11" chord, wing area 550 sq. in. Prefabricated fuselage, Class C-D $5.75



F&B HINGES
Invisible, everlasting and they never pull loose.
Per set..... 30c

F-B MODEL AIRCRAFT -- 3240 LARIMER -- DENVER 5, COLO.

Sweeping the Country!

Preferred by Champions.
Contest Performance for Competition—
Dependability for Pleasure Flying.
For U-Control and Free Flight.
WIN with a WASP!!!!

Wasp .049 DISPLACEMENT

By Far the Best in Its Class

ATWOOD MANUFACTURING CO. PICO, CALIF.

contest that they excel in, but the crack flyers in the club officiate rather than dominate the competition. Trophies are awarded each week. The Atlanta Exchange Club and the CAP are setting up a full-scale air show featuring Betty Skelton for May. Object: to build up the modelplane project fund!

F. E. Story of Talladega, Ala., is anxious to promote a model meet in that community. Nearby modelers are requested to contact Mr. S. The Veco stunt flyers from Atlanta have expanded into speed and team racing and are now billed as the Eight-Ball Flyers. The group took 5 out of 9 places in precision aerobatics at Dallas.

Twice Champ. James Monroe of Miami, Florida, walked off with high point honors for the SECOND time at the Second Tangerine International Mid-Winter Model Airplane Meet held in Orlando, Florida. James, who will graduate to the Senior group this year, was far out in front with 49 points.

The weather man in Florida, surely a model builder, came through beautifully for the three-day meet except for a slight breeze the first day. TI felt a few growing pains, particularly because about 300 more planes arrived than expected, but with the combined efforts of contestants and officials, the meet soared to a successful close with a barbecue provided by the Exchange Club of Orlando, sponsors of the meet. The 154 trophies were awarded at that time.

Around 250 contestants representing twenty-five states, the District of Columbia and Cuba, registered almost 1,000 planes. The six Canadians who were expected to arrive, headed by David Norton of the Toronto Gas Hoppers, wrote that they got almost to Niagara Falls when their trailer jack-knifed in a snowbank and they were unable to get hauled out in time to make it to Florida. Another international catastrophe overtook the Mexicans when one was called back to work when his partner broke his leg, and another was called unexpectedly to Los Angeles, but according to Manuel Tellez, President of the Federacion de Aeromodelismo de Mexico, plans are already under way for their group to get to the 3rd TI.

Cuba was present in force, and the Cuban Army generously flew the 11 representatives of the country to Orlando. In charge of the team were Julio C. Mas, Captain, and Eduardo Mederos, President of the Latin American Junior Chamber of Commerce. Also in the group was Victor Pina, who holds a position equivalent to the Director of Education of the Civil Aeronautics Administration.

An Air Force delegation from Texas also arrived by air, and brought representatives from six Lone Star air bases.

Probably for the first time since the word "tourist" was coined, visitors to Florida could obtain housing for 25 cents a night. This was provided by the Orlando Air Force Base. At Pinecastle AFB where the meet was held the 838th Engineer Aviation Battalion, Co. B, set up a field kitchen and provided hot lunches for 35 cents.

Officiating as Master of Ceremonies was "Flannel Mouth Don" Stremmel of "Smilin' Jack" fame.

Death Is So Permanent. Regular followers of this column will recall past remarks about not flying control line models (or any models!) near electric power lines. Latest account of a death caused by control wires touching a power line comes from Houston, Texas, where a 36-year-old enthusiast was electrocuted.

This is the third such fatal accident brought to our attention.

We say again—don't fly models near power lines . . . or any lines.

AERONAUTICAL UNIVERSITY

The aircraft industry urgently needs trained personnel. Here is YOUR opportunity for a rewarding and interesting future. Study Aeronautical Engineering, Engineering Drafting, Airplane and Engine Mechanics (approved by C.A.A.).

Outstanding faculty, modern equipment. Part-time employment. Free placement service. Big demand for graduates. 23rd year. Founded by Curtiss-Wright. Write for free bulletin and "Opportunities in Aviation."

AERONAUTICAL UNIVERSITY
Dept. 93, 1905 Prairie Avenue, Chicago 16, Illinois

NEW! 21 1/2 Self Aligning Slots

CONSOLIDATED
STARLET
$2.75
for .039 to .074 engines
150 Sq. In. Wing Area
14 1/4" Fuselage
24" Span

Another stand-out design—for hours of stunt or pleasure flying—by 'Art' Hasselbach! The STARLET—for beginner, contestant or expert! A 'baby brother' replica of the popular GUIDED STAR featuring the very same advanced stability design—AND 'can't-go-wrong' assembly! 21 1/2 self-aligning slots assures perfect finish—spectacular performance! Complete construction kit, less engine: Die-cut sides, top, bottom, plywood formers, flaps wing-ribs, side stiffeners. Shaped rudder, stab, elevator, cockpit, turtle deck & landing gear! Superdetailed plans, assembly instructions & building help. 24" span, 14 1/4" fuselage. Order the STARLET from your dealer today! If none near you, order direct! Add 50c for packing, postage.

$5.95
GUIDED Star
21 SELF ALIGNING SLOTS
435 sq. in. wing area
24" Fuselage
40" Wing Span
For 19, 29 or 35 cu. in. displ. motors

"CAN'T GO WRONG" assembly kit and plans incorporate the careful, detailed, precise elements which make CONSOLIDATED standard for the field! 21 self-aligning slots, automatically "builds itself!" Die-cut sides, top, bottom, plywood formers, flaps, wing-ribs, side stiffeners. Shaped rudder, stab, elevator, cockpit, turtle deck and landing gear! 40" span, 24" fuselage.

159.23 M.P.H.
HELL-RAZOR
1/2 A Hell-Razor ready only $2
MAGNESIUM ALLOY BOTTOM
Engine is machine-bolted to magnesium-alloy bottom. It's metal-to-metal!—the 1st time in model flying!
COOLER RUNNING . . LONGER LASTING
Metal bottom contributes immeasurable ruggedness . . . for life span far beyond any design to date!

CLASS "A" $5.95 Casting $2.75
CLASS "B" $6.50 Casting $2.75
"C" "D" $6.95 Casting $2.95

REDI-CARVED FUSELAGE SOLIDS
1/4" SCALE
Kingfisher $2

- Focke-Wulf 190...$1.25
- Hawker-Typhoon ..$1.25
- Grumman Hellcat $1.25
- Jap Zero.....$1.25
- Republic P-47 ....$1.25
- N. Amer. P-51...$1.25
- Boeing B-17.....$1.50
- Lockheed P-38....$2.00

AT DEALERS! If none near you, order direct enclosing remittance! No C.O.D. service.

Consolidated AT-552
3087 Third Avenue, New York 56, N. Y.

WE PAY POSTAGE AND INSURANCE
You have tried the rest—Now try the best!
Write Dept. 50
SMS AT E AND H means "SUPER MAIL SERVICE"
Write Dept. 50
The leading Mail Order House in the Model Railroading Industry now invades the Model Airplane Field. Large and complete stock of kits, accessories and tools. We offer you the best and fastest "Super Mail Service"! Our complete catalog is 25c (no stamps), or use Air Trails as your catalog. Try us today!
America's Finest Model Railroad Catalog 35c
TERMS Minimum Order $2.50. No C.O.D.'s! No Stamps! Send Check or Money Order to E and H STORES, Dept. 50, 130 W. Chelten Ave., Philadelphia 44. Penn.
THE E AND H STORES
130 W. CHELTEN AVE. PHILADELPHIA 44

TIRED OF TRYING? Try TROST
EXPERIENCE 22 YEARS COUNTS
In addition to leading lines of Model Planes and Trains, TROST stocks many Imported toys, Leather Handicraft, Woodworking, Bead and Shell craft, Woodburning, and many other kinds of hobbycraft. Dealers write for complete A to Z list.
TROST
Modelcraft and Hobbies
3111 W. 63rd St. Chicago 29
PLANES-TRAINS-SHIPS-PARTS-SUPPLIES

AT LAST THE LINE PROBLEM LICKED!

- 320 LB. TESTED
- QUICK OPERATING
- COMPACT
- LINE SAVER
- QUALITY PLASTIC

$1.75
AT YOUR DEALERS
THOMAS PRODUCTS 105 N. HALIFAX DAYTONA BEACH FLA.

Buy Where You Find THIS SEAL

IT ASSURES YOU THE BEST AND NEWEST... plus FRIENDLY SERVICE

Foreign News

(*Continued from page 70*)

Mixture of nationalities competing together heightens competition in meets staged in Europe. Holland, winner of the first F.N.A. Cup (a rubber event) in 1950, was host for the 1951 contest held at a military aerodrome with the assistance of the Royal Dutch Aeroclub. A Yugoslavian, Fresl, was winner with an excellent 12 min., 8 sec. total, his team competing against others from France, Belgium, Holland, and Italy. In another meet in Yugoslavia, this for power models, winners represented seven nationalities.

Channel crossing of unusual interest to modelers was completed by a five-foot model boat, diesel engined and controlled throughout the voyage by radio from an accompanying launch. Built by Electronics Developments, Ltd., a firm prominent in the British model industry, the midget craft used a 4.5 c.c. water-cooled diesel engine and a three-channel, three-reed radio control unit. The Dover-Calais passage required nine hours time, the only unusual incident being a temporary engine stoppage when seaweed became entangled in the propeller. Boat and radio gear were designed by George Honnest-Redlich.

South African modeling expert Bob Masters, of E. London, lists import restrictions, devaluation, and the lessened time the modelers have nowadays to devote to the hobby as chief reasons for a slump, model-wise, in his locality. Yet they manage to fly virtually all types of planes, including R/C, special emphasis being on speed, stunt and team racing. Annual Nats there is in April. Masters reports fine luck with a five-ft. (smaller-than-standard) Rudderbug, with Arden .19 engine and Aerotrol (kit) radio.

Beyond Gravity

(*Continued from page 21*)

than a fish, they doubt that Man will be able to accomplish this—at least not without a lot of practice. This is a vital problem, since there is no "up" or "down" in space while the ship is orbiting without power. When the rocket is cut in, you would perceive "down" as being in the direction of the exhaust and your orientation would be easier.

The way you breathe and the way your blood circulates may also be affected. The blood would have no weight, but the heart muscles would retain the same energy they use to pump down here. Would the heart, then, race uncontrolled, like an engine deprived suddenly of its brake or propeller? The space experts do not know for certain. It is not only your breathing equipment but the behavior of the air you're breathing that might cause difficulty under zero gravity.

Dr. Fritz Haber explained the spatial phenomenon: "Thermal convection would not exist within the ship's cabin when gravity is absent. Your expired air would remain in front of the nose and mouth like a cloud of slowly exhaled cigarette smoke in a still room. And, incidentally, we doubt that you would be able to smoke. Fire would not burn in the usual way (there would just be an explosive, all-consuming flame) since hot air would not rise. Neither would this collection of carbon-dioxide, moisture, and other impurities that would build up around the face."

POLK'S for RADIO CONTROL

An Outstanding Buy!

Complete & Ready to Operate
1. TRANSMITTER
2. RECEIVER
3. ESCAPEMENT

$39.95*

Prices separately: 1. $28.50; 2. $18.95; 3. $5.95

TRANSMITTER: 3A5 Twin triode tube giving greater radiation than any other commercial transmitter. Up to four watts input. Entirely self-contained including 8-ft. sectional Aerial. This transmitter will double the range of any known carrier operated receiver. Satisfactorily checked by G.P.O. for frequency stability and output. Within 0.5% limits. Batteries 135 Volt and 1.5 Volt.

RECEIVER: Carefully matched components to obtain 100% performance from the new gas filled R. C. tube. Tuning by variable inductance eliminating difficult adjustments. Small volumetric size achieved by tubular case.

ESCAPEMENT: 100% reliability due to robust and accurate construction of claw and rotor. Fitted with double winding and current saving device, a feature first developed by E. D. Weight only ¾ oz. Uses 3 Pen Cells.

CHAMPIONSHIP, CRASHPROOF PERFORMANCE
IN ALL PARTS OF THE WORLD

'E-D' Radio Control Unit has built a proud, UNFAILING PERFORMANCE reputation everywhere! Precision and rugged construction are basic! All auxiliary components, double on-off switch, meter and four-pin battery plugs and sockets, even solder is included!
Receiver weighs only 1¾ ozs. Uses two 22½ volt batteries, one 1½ volt pen cell. Your best buy for contest, experiment or pleasure! (MAIL ORDERS: Send check or money order, add $1 to cover packing and delivery.)

*POLK SPECIAL CONVERSION SERVICE. We will be glad to convert any E.D. receiver and transmitter to 27.255 m.c. for the nominal fee of only $12.95. Price includes crystal control. Send postpaid insured to Polks R.C. Dept. Converted set will be returned to you postpaid. . . . Polk's has a complete range of Diesel Engines for your radio control and all around flying.

DEALERS: Rush your order to Polk's at regular trade discounts. Also: Enjoy the convenience of single-shipment wholesale-service for * Airplanes * Engines * Supplies * Accessories * Railroads * Ship Models * Art Supplies * Books * Constructo Finished-Parts Ship Models with Finished Displays.

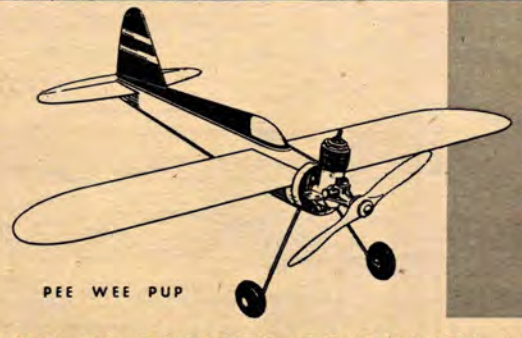
POLK'S HOBBIES 314 5th Ave., (32 St.) Dept. AT-5 N. Y. C. 1

SPECIAL PLAN FOR RADIO CONTROL!

AIR TRAILS PLAN #R101

McElwee's Robot, full-size drawings. How to Build Your Own Receiver-Transmitter. How to Build a Beep Box. . . . Send 35¢ to Air Trails Full-Size Plan Service, 304 East 45th Street, New York 17, New York

FLIGHT ENGINEERED



1. PEE WEE PUP 95c
Mighty lively. 17½" span ½ A
2. PEE WEE PURSUIT $1.25
½ A trainer, 28" span.
3. STUNT RUNT $1.25
16" span profile stunter for ½ A.
4. NOMAD free flight . . . $1.75
Profile fuselage, fine performance.
5. SUPER STUNT RUNT . . . $2.25
Beautiful stunt bipe for .020 engines.

JOY PRODUCTS COMPANY, Menominee, Michigan

YOUR BEST BET

MODEL PLANES FOR ½A ENGINES

VECO CONTROLINE

THE SCOUT

Perfect stunt plane for the beginner. 24" span

FREE-FLIGHT CONTEST TYPE

THE NAVAJO

Pylon Type 36" span

THE COMANCHE

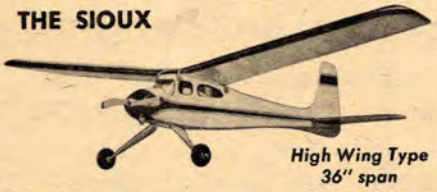
Also PAA load 36" span

VECO SPORT PLANES

THE DAKOTA

For Beginner 24" span

THE SIOUX



High Wing Type 36" span

VECO SCALE MODEL

TAYLOR CUB

"You'll love it!" 35" span

SOLD BY LEADING DEALERS EVERYWHERE

VECO PRODUCTS

Planes Engines

Propellers • Wheels • Accessories

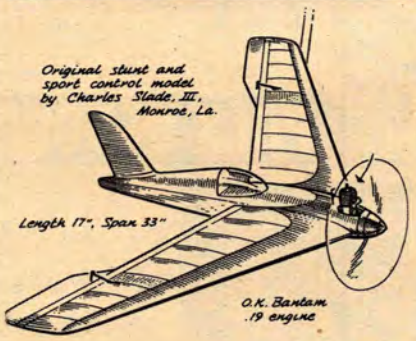
HENRY ENGINEERING CO., Burbank, Calif.

Dr. Buettner is developing a ventilation scheme that will keep the astronaut from asphyxiating himself—an inglorious fate indeed for a guy with nerve enough to launch himself into the cosmos.

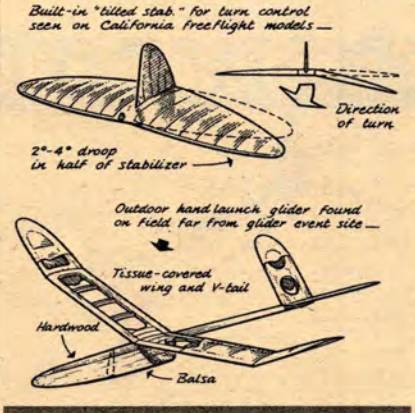
If things look as though they are going to be too tough on the astronaut—as if they weren't already—the Department is prepared to "provide a slight continuous acceleration to attain a certain amount of quasi-gravitation." This artificially induced gravity would solve a lot of these environmental problems, but might introduce operational headaches in engineering and navigation.

At this point, the space men corrected a misconception long held by most of us. This dealt with where "space" actually begins. Most of us think of this region as being from 250 to 500 miles up where the atmosphere ceases to exist. We are also prone to think of space as the zone where the terrestrial field of gravitation is so reduced as to be insignificant. All this just isn't so, insofar as the human element is concerned. They explained that Bill Bridgeman's flights in the Skyrocket to altitudes of 70,000 feet and better placed him within all space conditions except meteors. Zero gravity can be experienced under the right conditions as low as 40 miles—one need not ascend completely above the atmosphere for "free flight."

Although the gravity-free state is the topmost of their problems it is not, strangely enough, the most dangerous or the most difficult of solution. You can miscue in space from causes which have nothing to do with—or without—gravity. One of these is simply that the ship will travel faster than you can think. You move faster than the nervous system can conduct stimuli. This is "dead distance"; and to stay alive in it during landings or approaches you will trust to automatic controls which aren't limited by nerves. Two space ships maneuvering for landings near the earth at the relatively "slow" speed of



GOOD IDEAS!


Built-in "tilted stab." for turn control seen on California freeflight models—
Direction of turn
2°-4° droop in half of stabilizer
Outdoor hand launch glider found on field far from glider event site—
Tissue-covered wing and V-tail
Hardwood
Balsa

CLASSIFIED ADVERTISING

Everybody reads the classified. Here is a section hand-tailored for anyone with something to sell or buy.

RATES: Minimum 14 words for only 20c per word

Send remittance with ad to:

AIR TRAILS, 575 Madison Ave. New York 22, N.Y.

MOTORS

Trade in your used motor for 25% discount on new motor or supplies under $20. Gene's Model Shop, 40 West Montgomery Ave., Rockville, Md.

Used motors. Interesting display items not guaranteed. $1.00 each or 12 for $10.00. All American Model Motor Exchange, Dept. A.C., Box 885, Santa Monica, Calif.

Motor Exchange; 25% credit for your old motor toward purchase of new motor under $20.00. East Side Models, 432 Dewey St., Sandusky, Ohio.

TRADE-IN on new motors. We allow 25% discount for junk. 30% discount if in running condition. Model Mailing House, R.D. #1, Evans City, Pa.

PHOTOS

PHOTOS of aircraft from Wright biplane to latest jet. 250,000 photos in stock. Also old aviation books. Send dollar bill for six real photographs of the latest jets, plus the NEW 1952 catalogue. Aeroplane Photo Supply, Box 195-A, Toronto, Canada.

PHOTOGRAPHS WHOLESALE, 8 5x7's or 4 8x10 enlargements from your negative $1.00. Agents wanted. Halwa Studio, 131-K Mohawk Drive, Arnold, Pa.

COMBINATION OFFERS

Fox 35 (regular $14.95 value) plus any kit up to $5.95, both for only $16.95. For kits over $5.95, add difference. All American Model Motor Exchange, Dept. A.C. Box 885, Santa Monica, Calif.

20% credit for your old motor on new motor and kit. Morgan's Models, Box 274, Brookhaven, Miss.

SPECIAL OFFER

Receive a ½ Class A model airplane and engine practically as gift. Details 10c. Hobbycraft, Box 104-Q, Brooklyn 30, N. Y.

RADIO CONTROL

Construct low cost, efficient radio control for model planes and boats. Build several and sell to friends at big profit. Easily followed plans and instructions $2.00 postpaid. E. H. Brown, 3920A Leo St., Winston Salem, N. C.

E.D. MK. III R/C set—$28.75. Hivac tubes—$2.95. These and other bargains in English R/C equipment, diesel engines, Jetex, etc. shown in price list. G. Mark Levinson, 85 Livingston St., Brooklyn 2, N. Y.

BALSA WOOD

Top grades strips, sheets, planks. Free price list. Dealer's discount. Sig Mfg. Co., Montezuma, Iowa.

MAGAZINES

Read Model Aircraft, Britain's leading hobby magazine. 12 issues only $3.25. All American Model Motor Exchange, Dept. A.C. Box 885, Santa Monica, Calif.

PLANS

Build your own single place plane, using junk yard parts. Power with motorcycle engine. Complete plans and instructions $2.00 postpaid. E. H. Brown, 3920A Leo St., Winston Salem, N. C.

FLYING EQUIPMENT

CONTROLINERS! Release your plane without assistance with the new B-D Launchomatic. $3.00 P.P. B-D Products, Box 1124, Alliance, Neb.

WANTED

Plans, kits, parts, catalogues, U.S. model aircraft—Brooklyn 1926-1932. Ed Dalloz, 9105 Cottage Grove, Chicago, Ill.

FOR SALE

Exclusive hobby shop in town of 30,000. Will sell for inventory, plus fixtures. Reason for selling—owner re-entering Air Force. For particulars write, 24 Sixth Avenue South, St. Cloud, Minnesota.

"YOUR SUPPLIERS— NEVER YOUR COMPETITORS!"

100% WHOLESALE

WAIT!

For the *BEST* Radio Control EQUIPMENT - 27mc READY SOON!

Control Research
Box 9 Hampton, Va.

NEW 1952 MILITARY MINIATURE CATALOG

CORR'S new catalog of the world's finest MILITARY MINIATURES created by the leading figure artists of the U.S., England, France and the Orient. A special section is devoted to molds, paints, scenic materials, etc. for those who make their own; also unpainted figures and regimental badges. SEND 25c FOR YOUR COPY TODAY. Corr's Ships & Historic Models Catalog 25c

CORR'S
812-818 Ninth St., NW
Dept. AT, Washington 1, D.C.

9,000 mph would travel more than a mile before either pilot "saw" the other's ship. The two craft, entering upon a collision course almost three miles apart, would collide before either pilot was aware of the other's presence. Since it takes the human eye and brain between 3/10 and 3/100 of a second to "see" anything at all, the space ship is just naturally faster than the eye.

Radiations—cosmic and solar—hold the greatest menace. Among these are the alpha, beta, and gamma rays that prove so lethal in atomic explosions. Then there are the solar X-rays, corpuscles, and probably some other particles as yet unidentified. Infra-red and ultraviolet radiations, unfiltered by the atmosphere, will bear full blast upon folks who intrude into space. So will the most penetrating of all universal entities, the cosmic ray "primaries." These are expected to penetrate from three to five inches into the body, despite the protection of the ship's hull. In your body, the reaction of these nuclei would cause ionization of the tissues and organs. No sudden death-blow, this effect would probably be "of the accumulative type which builds up insidiously within the body, on the order of radium poisoning." Until the space men find out for certain, the astronauts will be shielded by lead aprons.

A better but longer-range solution is a fantastic medicine that is supposed to protect one against such radiations. Periodic doses of this medicine will furnish temporary immunity by *neutralizing the ionization process.* They found that oral administration of a substance called cystine in rats gave the rodents protection against laboratory-induced radiations. This may turn out to be the best insurance against the ailment of "space blues."

But you'll need more than a dose of this stuff to fend off the meteorites. Even if you stayed grounded when meteor showers were predicted—and for the most part, such showers are predictable—a chance meeting with a random particle could be disastrous. Some of these space hoboes are just like dust specs. Others come the size of buckshot.

Meteors are the next fastest thing to a streak of lightning or a cosmic ray, traveling between 20 and 50 miles per second. Collision with a senior-sized meteor would, they explained, blow up everything quickly and mercifully with one grand "explosion into a vacuum." Junior particles would make themselves right at home through even a thick hull and "within a fraction of a second, the conditions of a 'hard' vacuum would obtain." This was interpreted to mean that the astronaut would die about five times over. There would be no breathing, no pressurizing, no heat, no nothing—vacuum, period.

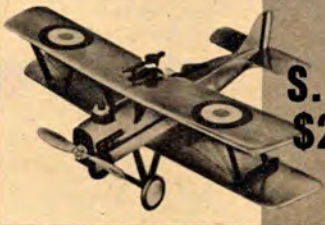
The only defense against these space denizens lies in avoiding the orbits of comets, avoiding the plane of the earth's orbit—which is fundamentally the plane of the solar system, equipping the space ship with a "meteor bumper," and pray-

(*Continued on page* 78)

AMERICA'S HIT KITS

FLIP-FLAP $3.50
Revolutionary full stunt job. 24" span.

PRIMER $1.40
Realistic profile for stunt, sport. 18" span.



S.E.-5 $2.50
Super prefab half-A scale. 17" span.

SKY-LARK $2.00
Sensational half-A freeflight. 31" span.

WING DINGUS $2.25
Expert's choice for stunt, sport. 16" span.

WING DING $2.25
Tops for half-A contest flying. 18" span.

HOWARD "IKE" $3.00
Howard's famous "Ike" scale Racer. 20" span.

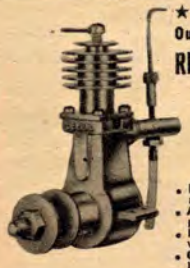
At your dealers—add 25c per kit by mail
MASTER MODELCRAFT
727 Westchester Ave., N. Y. 55, N. Y.

NEW ENGLAND DEALERS:
to meet your customer's desires ...call NEW ENGLAND'S NO. 1 SUPPLIERS!

A COMPLETE SOURCE FOR ALL YOUR MODEL AND HOBBY NEEDS.
Serving New England Dealers for 20 Years with Fast and Dependable Service

We Stock All Leading Lines of:
MODEL AIRPLANES
MODEL RAILROADS
MODEL RACE CARS
MODEL SHIPS & BOATS
MOTORS & ACCESSORIES
ALL CRAFT ITEMS

NORTHEAST Hobby Distributors
87 HIGH STREET • BOSTON, MASS



Our 478th Advertisement!
REAL DIESEL ENGINE!
$2.95 You can't beat this price!

- Ideal for planes, boats, midget cars
- Actually runs at 7500 RPM, produces 1/7 HP
- Height a full 3½ inches; weight 5 ounces
- Comes completely assembled, ready for operation

MAYBE WE'RE CRAZY, giving away a precision diesel engine, complete with cylinder and piston, carburetor, crankshaft, connecting rod, etc. for ONLY $2.95. But we're selling thousands of DEEZILS all over the world, and that keeps our production costs down. DEEZIL is streamlined, compact, rugged. Starts quickly, easy to install, runs for years! Fast delivery if you ORDER DEEZIL today!

SEND $2.95 plus 25¢ postage
GOTHAM HOBBY CORP., Dept. A
107 E. 126th St., New York 35, N. Y.

Did you know?

Mercury Model Airplane Co. uses Hobby Decal's "TRIM-FILM" to trim their outstanding line of model planes?

Here is one of the new "FLYING CIRCUS SERIES"

No. 29

15c

now available at your Hobby Shop.

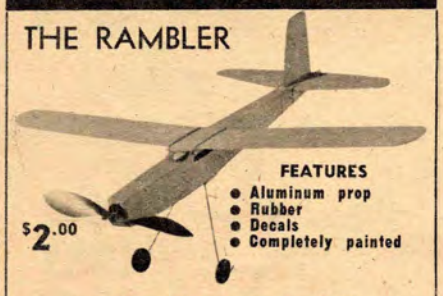
Send for free "Tips" booklet

HOBBY DECAL SPECIALISTS

314A Elm Street Perth Amboy, N. J.

READY TO FLY

THE RAMBLER



FEATURES
- Aluminum prop
- Rubber
- Decals
- Completely painted

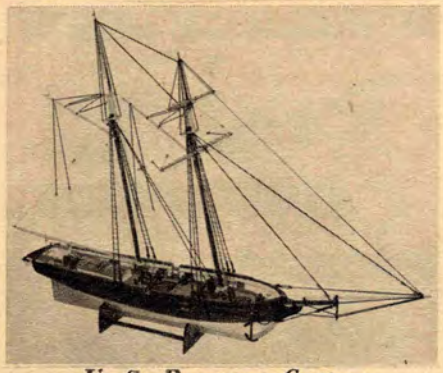
$2.00

- Nothing to build!
- Easy to Assemble!
- Still Easier to Fly!

Wingspan 24", 18" fuselage, 9" aluminum propeller, rubber powered, formed wire landing gear, wheels, completely sprayed in red and yellow, 3 color Air Corps decals, grade A balsa throughout. If not available at your dealer order direct from factory **$2.25** p.p.

APEX NOVELTY MFGRS. INC.

541-543 Orchard St., New Haven 11, Conn.



U. S. Revenue Cutter

ROGER B. TANEY

1833

Of a popular class of schooner, TANEY had an active career on the East Coast.

Kit is on 5/32"=1' scale (o.a. length 19¼"), contains machine carved hardwood hull, wood materials, castings, brass, and cordage necessary for the complete model. Complete kit **$12.50** at dealers from coast to coast.

Send 25¢ for our 1952, 32 page catalog.

Model Shipways, Folio 35

476 Main St. Fort Lee, N. J.

SHOWCASE

TRY YOUR FAVORITE HOBBY SHOP FOR ITEMS PRESENTED HERE. ALL DATA CHECKED CAREFULLY, BUT IS SUBJECT TO CHANGE

FROM FADOR

Among the Smallster auto kits, authentic miniatures of cars of bygone days, is this EMF 1910 3-in-oner with a wheelbase of 6¼ in. Fador has other famous old cars in line: 1904 Cadillac, 1905 Reo, 1905 White Steamer, 1909 Hupmobile, 1909 EMF 30 racer and the 1908 Baker Electric. See ads for special offer.

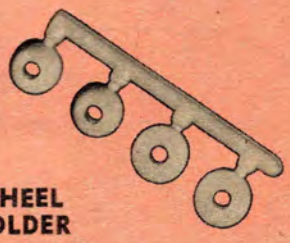
Scientific's latest control-line model is the well-known Boeing P-26A to commemorate the famous Thunderbird and 94th Pursuit Squadrons. Carved balsa fuselage and ready-formed metal drag ring. Takes engines up to .074 cu. in. Wingspan is 18 in., length is 13.5 in. Price $2.95 for semi-scale job.

BOEING P-26A

IDEAL SAILOR

Ideal Models get right in the swim with their new Aqua Pal Skiff, a 16-in. easily assembled prefabricated kit boat. Features die-cut oar blades, panels, bow plates, seats. Two molded balsa sides, cast oar locks and horns make the job easy. Can take a tiny electric inboard or outboard motor for power. $1.50.

These self-locking nylon wheel collars by Sullivan Products are going to make building a lot easier. These are easily pushed into place with fingers, yet require pliers for removal. Lighter than aluminum, stronger than steel, says Mattie Sullivan. 1/16, 3/32 and ⅛ inch sizes. Can be used on pushrods.



WHEEL HOLDER

LIVE WIRE

A model specially designed for radio control training is de-Bolt's Live Wire, put out by Dmeco (also known as the de-Bolt Model Engineering Co.). Span is 4 feet, area is 432 sq. in. Harold says it takes any .09 motor—diesel or glow. The R/C unit easily removed intact for quick checking and servicing.

12 beautiful power boat construction kits —21" to 33½" length. $2.95 to $9.75. Write for free literature on boats, motors, fittings. At all hobby stores. Chris-Craft, Owens, Harbor, Vinyard, Colonial. Large boat construction from factory plans. U. S. A. and Armed Services only.

DUMAS PRODUCTS
2347 Aviation Highway, Tucson, Arizona
World's Largest Builder of Motor Boat Models

RADIO CONTROL

Complete Unit less Batteries **$37.50**

Consisting of Transmitter & Tube, Antenna, Escapement, and Receiver with Relay and Tube. And

$3.00 for Complete set of

BUILD-IT-YOURSELF MANUALS

These manuals contain circuit diagrams and complete instructions. Send for Free Catalogue.

Also ready now, *Postpaid for 50 cts.* including complete circuits & directions for flying Model Airplanes by Radio Control, is our new **50 CTS.**

INSTRUCTION MANUAL

RADIO CONTROL HEADQUARTERS
Belmar, New Jersey

CLIMBS LIKE A ROCKET
GLIDES LIKE A BIRD

"THIN MAN"

CONTENTS
- DIE CUT RIBS
- VISO TANK
- SHAPED FUSELAGE, PYLON, TIPS, ETC.
- DETAILED PLANS AND INSTRUCTIONS

32" WINGSPAN
for .04 to .09 Engines

"The Aristocrat of the Skies"

CONTEST CRAFT CO. · Riverdale, Md.

THIN MAN

Meet the Thin Man, a product of Contest Craft. This $1.95 Half-A and small-A free flight takes engines from .04 to .09. Kit has die-cut ribs, "viso" fuel tank, shaped fuselage, Pylon, tips. Plans are detailed as are the instructions. Job has a wing of 32 in. span. Twin sub rudders, with single wheel gear.

RADIO BOOK

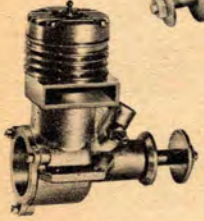
We just can't visualize a serious radio control fan being without this "Model Control by Radio" book published by Radcraft Publications. Authored by Edward L. Safford, Jr., instructor in guided missile electronics at Fort Bliss, Tex. Photos, schematics, 122 pages; #43 in Gernsback Library.

WARHAWK

Big deal at F&B these days is their new P-40F Curtiss Warhawk flying scale model that also checks in for team racing. Takes B and C engines, spans 32.5 in. Die-cut and prefabbed parts. Shaped and notched leading and trailing edge in wing. Wing area is 156 sq. in. $5.95. Decals and windshield.

FOX 59

HP — 1+, WT — 10½ oz.
WORLD'S FINEST FOR STUNT AND FREE FLIGHT



FOX 35

HP — ½+, WT — 6 oz.
FIRST — 1950 AND 1951 NATIONALS

FOX for . . .
- EASIER STARTING
- SMOOTHER, STEADIER RUNNING
- MORE POWER — LESS WEIGHT

ARNOLD & FOX ENGINEERING CO.
7401 VARNA AVE., NORTH HOLLYWOOD, CALIF.

Frontier EARLY WESTERN MODEL KITS

IN THE RED AND YELLOW BOXES!

BEER WAGON

This famous wagon of Frontier days still rolls through the streets in some of the old towns. Frontier's authentic model is made of pine and balsa with molded plastic wheels. Complete with turned wooden barrels.

$1.50

SEE OUR COMPLETE LINE OF WESTERN KITS AT YOUR FAVORITE DEALER

At Last a Dependable Smoke Screen For MODEL PLANES

Available at your dealer. Special rates to jobbers and clubs.

Now you can get more fun out of flying with the first dependable and colorful smoke screen.

Easy to attach to any model—beautiful color orange smoke. Lasts one minute and a half.

Be the first to have more fun flying combat and stunt and lay your own smoke screen.

Special note to free flighters: This bright orange smoke will enable you to locate your model quickly, saving time and the loss of your plane. You can use Great Western Smoke Trails to determine ground thermals at contests. Leaves long lasting layer of colorful orange smoke.

FOR MORE FUN IN FLYING, GET GREAT WESTERN SMOKE TRAIL TODAY.

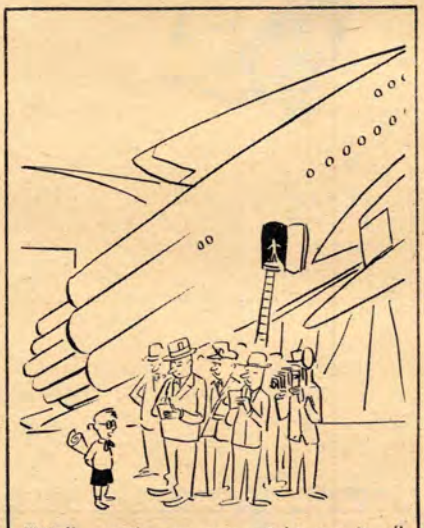
GREAT WESTERN MFG. CO., INC.
Route 10, Box 257-A, Fort Worth, Texas, Market 4948

(Continued from page 75)

ing regularly. The bumper consists of a secondary skin, or outer shell, installed perhaps a quarter of an inch outside the major hull structure. Dust speck types and junior meteors would explode against the bumper shell. The expanding vapor and small fragments would be spread over a wider, non-puncturing area when they encountered the primary, inner skin; and this distribution of force would reduce or obviate entirely penetration of the space ship.

If, in spite of this device, some of the particles made themselves at home, Dr. Buettner suggested filling the between-skin space with a number of partially inflated rubber balloons. In the event of puncture, these would expand and float with the outgoing air into the gap to plug the leak. The balloons would hold until the crew could slap pressure patches against the punctures in the primary skin. (Pressure inside the cabin would seal these against the skin.) Since meteors are of ferrous composition, electro-magnets might be used to collect such particles as did penetrate the ship to keep them from affecting the occupants or the machinery.

Insofar as a space program is concerned, the Buck Rogers boys say: "We might spend ten years in the development of satellite vehicles before we go any further out into space." But that doesn't mean an initial exploratory voyage couldn't be made sooner. Gen. Armstrong told this correspondent: "If we had enough money and top priority, we could put a man out in space in less than two years' time. And he would stand an excellent chance of coming back alive."



"Well, gentlemen, you might say it all started with a six-inch solid scale model."

CURTISS P40F GAS MODEL

New Improved Model

48" Span. Free flight or U Control

Improved with new 2¾" alum. spinner and 3" Veco alum. disk semi-pneumatic rubber wheels. Planked type body, parts printed on balsa, and all parts. Set **$9.00**

REPUBLIC P47D GAS MODEL

35¾" span, ⅞" scale. Length 30½". One-piece moulded, clear plexiglas cockpit enclosure. 2½" scale alum. disk rubber wheels. Body planking full size plans. Uses B or C motor. Set **$5.95**

9' TAYLOR CRAFT GAS MODEL

9 foot Span. Can use Radio control. Set has 36 ready cut wing ribs, cut plywood body formers, 16" carved prop, tail wheel unit, 2 full size plans, printed balsa, silkspan, etc. Uses "C" type motor, single, twin, or 4 cyl. motor. Set without motor or wheels, postpaid..... **$17.50**

Extra pair of 4½" airwheels. $3.00

VOUGHT F2G GAS MODEL

41" span. U Control B or C Motor. Scale model of 1949 Thompson Trophy winner. Set has 2½" scale rubber tired alum. disk wheels 4¼" aluminum cowl, body planking, moulded, clear plexiglas cockpit enclosure, plastic spinner, etc. This is one of the finest equipped models in the world. Const. set **$6.75**

Stearman PT17

Set has 2½" celluloid motor, plastic prop, etc. 23" span. Const. set **$2.95**

N. American B-25

33½" span. ½" scale. Const. set. Rubber driven... **$4.00**

Grumman-F3F1

32" span. 1" scale. Const. set. Rubber driven... **$3.75**

Elf 4-Cyl. Gas Motor

Elf 1-3 h.p. 4¼" wide. Price **$49.50**

BOEING PT17 GAS

45" Span. Can use 5 cyl. M5 motor to scale or B or C type motor. U control. Set has scale rubber wheels and all spec. parts, ready cut wing ribs, tail wheel unit and wheel. Const. set.. **$9.95**

Add 25c for postage. Catalog—10c coin

MINIATURE AIRCRAFT CORP.

83 Low Terrace, Staten Island 1, N. Y.

HEY FELLOWS!

NOW . . . YOU CAN HAVE AN EXACT REPLICA OF THE AIR FORCE INSIGNIA!

Yes sir! An exact replica of the Air Force Insignia can be yours for only **50¢!** You'll be as proud as a peacock and the envy of your circle of friends with your attractively designed bronze and silver Insignia!

And that's not all! With each Insignia, you receive **FREE** our latest 1952 Military Catalog containing over 1000 items, beautifully illustrated in every detail! Don't wait! Send your order **TODAY** enclosing only **50¢** and we will promptly ship your Insignia with our handsome Catalog!

Monarch Military Products Co., Inc.
270 West 43rd St., Dept A-1, New York 18

SKY SAIL

WET or DRY it's easy to apply!

SKY SAIL the Sensational model airplane covering is stocked in a size and weight for every model, and in BRILLIANT COLORS TOO!

Write us for free sample booklet

"Win With Sky Sail"

WHITFIELD PAPER WORKS, INC.
Est. 1869
409 Pearl St., New York 38, N. Y.

WATCH OUT FOR OUR FIGHTING "JETS"

by MAJ. C. B. COLBY, CAP. The up-to-the-minute book of 22 jet planes in action photographs, complete with silhouettes and specifications just released from Washington.

Buy your copy today at your bookstore or send $1.00 with this advertisement and your name and address to

COWARD-McCANN, Inc.
210 Madison Avenue, New York 16

ENGINEERING DEGREE

Graduates in Demand

27 MONTHS

• Speed-up training in Engineering — Aeronautical, Chemical, Civil, Electrical, Mechanical and Radio (inc. TV and Electronics). B.S. degree in 27 months. Frequent trips to outstanding industrial plants. Modern lab facilities.

Earn part or all of your expenses in this large industrial center. Low tuition.

If you are called into service, while still a student, you will be prepared for a specialized military job, AND can return to school without losing credits. Approved for veterans. Enter June, Sept., Dec. or March. Send for free catalog today.

INDIANA TECHNICAL COLLEGE
352 E. Washington Blvd., Fort Wayne 2, Ind.

most-complete stocks...

complete line of model planes, boats, trains, race cars, crafts

LEITZSEY model distributors
P. O. Box 5221-FP Columbia, S. C.

AIR TRAILS Hobby Shop Directory

Model Builders! Here's a listing of the nation's leading hobby shops. You'll want to file it away—and when you're in the neighborhood, drop in and browse around. They're expecting you.

NEBRASKA—LINCOLN
Model Airplanes — Race Cars — Railroads — Boats — Handcrafts — Tools Repair Parts
9:00 to 5:30 & Thursday Evenings.
LINCOLN HOBBY SUPPLY
1123 P STREET 2-4692

OKLAHOMA—OKLAHOMA CITY
Oklahoma City's largest exclusive Hobby Shop. Use Air Trails & Model Railroader for catalogs.
9:00 A.M.—6:30 P.M. (12-4 Sun.)
CAMPBELL'S MODEL AIR DEPOT
1133 NW 23rd Okla. City, Okla.

FLORIDA—TAMPA
Complete Modern Stock Planes, Engines, Ships, Trains Race Cars, Tools and Supplies Everything Needed
EDWARDS' HOBBIES
108 East Cass Street 26-2092

MASSACHUSETTS—CAMBRIDGE
Model planes, motors, railroads, ships and accessories.
9 to 6 daily and Thurs., Sat. evenings.
CROSBY'S HOBBY CENTRE
1704A Mass. Ave. KI 7-4389

NEW YORK—BROOKLYN HEADQUARTERS!
Everything for model airplane builders. Accessories our specialty. Engines, parts and service. Everything in Air Trails.
PARK HOBBY CENTER
8120 Seventh Ave. Shore Rd. 5-2972

OREGON—PORTLAND
Complete lines of Planes-Engines-Boats Race Cars-Railroads-Vehicles and Handicraft Supplies
10 A.M. to 6 P.M. Weekdays
Closed Sundays
VIC'S HOBBY SUPPLY
1730 N.E. 40th Ave. Garfield 3108

INDIANA—INDIANAPOLIS (19)
Model Planes, Trains, Race Cars, Motor Parts
Lionel—American Flyer Repairing
10:30 to 7 P.M. Daily
BOB STEELE HOBBY CENTER
1008 No. Emerson Ave. Irvington 1617

MISSOURI—KANSAS CITY
Model Airplane, Boat, Race Car, Railroad and Hobby Supplies. See our Big operating Train display.
NORTHEAST TOY & HOBBY CENTER
4825 Independence Ave. Be. 7849

NEW YORK—JAMAICA (3)
HOBBIES — THAT'S ALL!
Regular Hours 9 a.m. to 7 p.m.
9 a.m. to 9 p.m. Mon. & Fri.
9 a.m. to 7 p.m. Saturdays
Holiday Hours (Nov. to Feb.)
11 a.m. to 9 p.m. daily
JAMCO (Jamaica Co. Hobbies, Inc.)
90-04 168th St. Phone JA 3-9140

PENNSYLVANIA—PHILADELPHIA
HOBBY HEADQUARTERS
Complete stock of model airplanes, engines, parts, accessories, etc. Also ships—trains—autos—crafts
QUAKER CITY HOBBY SHOP
N.E. Cor. 6th & Market Sts. Lo 3-7465

LOUISIANA—NEW ORLEANS
Airplanes — Boats — Supplies
TT-HO-S-O Railroad
Open 9-5; Sat. 9-3
CRESS MODEL SHOPPE
1134 St. Charles Ave. Ra 4873

MISSOURI—PORTAGEVILLE
Model airplanes—motors—solid models. Everything for model airplane builders. Accessories for your every need.
South East Missouri's Finest
Hobby Center
Mosby Hardware Phone 21

OHIO—DAYTON
Convince yourself; Since 1928, folks traveled many miles to shop our mammoth stock; Open Sunday
GOOD'S HOBBY SHOP
1729 N. Main St. Taylor 5578

WASHINGTON—SEATTLE
Good Service—Helpful Advice
Complete Stock Planes—Boats—Cars—H O Trains
10-6 P.M. W-F 10-9 P.M.
BUZZ & DOUG'S HOBBY SHOP
701 E. Pike at Boylston Ea 8650

R/C Roundup

(*Continued from page* 10)

6 ft. span, O&R 33 power, and Aerotrol equipment. Jack is fortunate in having a Ham license (how about sending in your frequency and call for our R/C on-the-air Forum?). He wonders if many of the radio boys use storage batteries and vibrator supplies for their transmitters, a system he favors. Not many; at a rough guess we'd say at least 90% of all R/C flyers use dry batteries.

The first of the new list of officers for 1952 has come in. The Pittsburgh Flying Circuits elected Norman Tauberg president, Fred Collins veep, Thomas O'Toole treasurer, and Jim Schenck secretary. Jim is hard at work on the code and other requirements to be ready for the time when his Novice license runs out and he has to take the regular Ham license tests. He is having a lot of fun with regular ham operation on the air, incidentally, and operates on 3720 kc.

Californian Dick Schumacher recently lost a radio ship O.O.S. and it was later discovered up near the top of a set in a movie lot. Not until a workman had dropped a 2x4 on it, though! Just shows the hazards of living out in that fabulous land.

Forrest Cole, our reliable correspondent from Georgia, writes that the Marietta Kittyhawks Club has been reorganized, and that it is now about 75% R/C. The Club meets twice monthly at Marietta, and they fly every Sunday at the Lockheed plant. Forrest was out on the Pacific Coast recently and brought home one of the new Bonner Compound escapements.

Another candidate for the "on-the-air Forum" is R. J. Malone, 3716 24th St., N.E., Washington 18, D.C. He is W30Q0 and operates mostly on 7 mc. with V.F.O. He is just starting in on R/C and has a plane under way. Will use a

DON'T DELAY

You'll find your model building a lot easier and a lot more fun if you have one of the new "AT" Model Annuals at your elbow. It's jam-packed with innumerable hints, plans and hot ideas.

**Price, 50c in U. S.
60c in Canada
$1 elsewhere.**

Don't miss it!

If your local newsstand or hobby dealer is sold out, send correct price to Air Trails, 304 E. 45th St., N. Y. 17, N. Y.

ADVERTISERS' INDEX

May, 1952

Ace Products	62
Aeronautical University	72
A-J Aircraft Co.	13
All American Model Motor Exchange	64
American Telasco, Ltd.	62
America's Hobby Center, Inc.	6, 7, 9, 81
Apex Novelty Mfgrs., Inc.	76
Arnold & Fox Engineering Co.	77
Atwood Mfg.	71
Berkeley Models, Inc.	56, 82
Buzz & Doug's Hobby Shop	79
Cal-Aero Technical Institute	54
Campbell's Model Air Depot	79
Cleveland Model & Supply Co.	64
Comet Model Hobby, Inc.	5
Consolidated Model Engineering Co.	72
Contest Craft Co.	77
Control Research	75
Corr's	75
Coward-McCann, Inc.	78
Crescent Model Shop	80
Cress Model Shoppe	79
Crosby's Hobby Centre	79
Dallas School of Aviation	10
Dealers Hobby Supply	56
deBolt Model Engineering Co.	53
Dumas Products	77
Dyna-Model Products, Inc.	55
The E and H Stores	72
Edwards' Hobbies	79
Embry-Riddle School of Aviation	8
Enterprise Model Aircraft & Supply Co., Inc.	63
Fador Mfg. Co.	61
F-B Model Aircraft	71
Forster Bros.	66
Francisco Laboratories	80
Frontier Mfg. Co.	77
Good's Hobby Shop	79
Gotham Hobby Corp.	75
Great Western Mfg. Co., Inc.	77
Grish Bros.	68
Paul K. Guillow	11
Harley-Davidson Motor Co.	58
Haw-Ki Hobby Supply Co.	64
Helicopters for Industry, Inc.	69
Henry Engineering Co.	74
Herkimer Tool & Model Works, Inc.	Back Cover
Hobby Decal Specialists	76
Ideal Models	58
Indiana Technical College	78
Jamco (Jamaica Co. Hobbies, Inc.)	79
Joy Products	73
Junior Aeronautical Supply Co.	52
K & B Mfg. Co.	2d Cover
Leitzsey Model Dist.	78
Lincoln Hobby Supply	79
Master Modelcraft	75
Mercury Model Airplane Co.	52
Miniature Aircraft Corp.	78
Mod-Ad Agency, Inc.	6
Model Craft Hobbies, Ltd.	65
Model & Hobby Industry	72
Model Shipways	76
Monarch Military Products	78
Monarch Model Co. Inc.	59
Monogram Models	51
Mosby Hardware	79
Mutual Broadcasting System	66
National Model Distributors	67
Northeast Hobby Dist.	75
Northeast Toy & Hobby Center	79
Northrop Aeronautical Institute	16
Pan American World Airways	18
Park Hobby Center	79
Parks College of Saint Louis University	3
Perfect Quality Model Accessories	62
Phil-leys	58
Plymouth Motor Corp. Div. Chrysler Motor Corp.	17
Polk's Model Craft Hobbies	73
Quaker City Hobby Shop	79
Radcraft Publications, Inc.	56
Radio Control Headquarters	77
Russell Bros. Products	60
Scranton Hobby Center	81
Sky Hobby, Inc.	75
Sparton School of Aeronautics	12
Speed-O-Lag Products Co.	65
Bob Steele Hobby Center	79
Sterling Models	61
Sullivan Products	70
Testor Chemical Co.	3rd Cover, 42, 43
Thomas Products	72
Top Flite Models, Inc.	67
Trost Modelcraft Hobbies	72
United States Army and United States Air Force Recruiting Service	15
United States Rubber Co.	57
University of Houston, College of Technology	61
Vic's Hobby Supply	79
Whitfield Paper Works, Inc.	78

While every precaution is taken to insure accuracy, we cannot guarantee against the possibility of an occasional change or omission in the preparation of this May 1952 index.

crystal-controlled transmitter with a fair amount of power output.

Technical Topics. We mentioned in the March Column our three-tube receiver, and have gotten some information and pictures of a miniaturized version built by James Jensen of Altadena, Calif. John Acker sent the fine pix shown here, and tells us that the receiver weighs 4 oz. It is used with 67.5 V. and has proven to be just as sensitive as the RK61 sets, but will respond well with considerably less transmitter power. The circuit is the same as the original, but the layout is entirely different; the three tubes are normally held in place with adhesive tape, which was removed for the picture.

Last month we gave you a circuit of a crystal control transmitter for the 27 mc. spots using a 3A4 tube to get somewhat more power than afforded by the more common 1S4 specified in the A.T. Annual job. Further experimentation turned up the triode-connected version (schematic shown on pg. 10); this has been tried out by several individuals with good results, so we feel it can be recommended for general use. It is ideal for the Novice operators on their 27 mc. band, and just right for the new spot at 27.255.

Tuning procedure is just the same as for the 1S4, and the pentode-connected 3A4 circuits. If you try it, make it up exactly as shown, for then you will be able to compare results with those obtained here. We run the tube on 135 V. and the fully loaded plate current should not be allowed to go over 22 ma. At this amount of power input (about 2.9 watts) the tube will give good life in R/C applications, and the output is well over a watt. We can light a brown bead #47 pilot lamp considerably brighter than it gets on a 6 V. storage battery.

Be sure to have someone with measuring equipment check your frequency before you put this transmitter on the air. Remember, these harmonic crystal

EVERYTHING YOU NEED TO FLY FOR FUN— Motor — Model Kit — Big Accessories Kit All for $7.50 postpaid in U.S.A. (add tax in Calif.)

Here's the bargain buy of the century. Get everything you need today, and start flying. YOUR CHOICE of five motors, any one of a dozen outstanding model kits, PLUS, our big accessories kit. All nationally known products. Check these terrific values and order at once.

SKY LEADER LITTLE SABRE LITTLE MUSTANG

YOUR CHOICE of THESE MOTORS
TORP, Jr.
CUB 074
SPITFIRE
SPITZY, Sr.
WASP

SPECIAL! SUPER OUTFIT!
★ McCOY 09 or ROYAL SPITFIRE
★ Model kit of your choice
★ Accessories kit, all for $8.75 pp.

YOUR CHOICE OF ONE MODEL KIT
BERKELEY's Sr. Puddle Jumper
F.B. Folly
BERKELEY's Mini-Hogan 34
ENTERPRISE's Sky Leader
ENTERPRISE's Baby Era
ENTERPRISE's Era Bipe
BRIGADIER 38
BOOT STRAPS
STINSON VOYAGER
LITTLE ACE
ZEEKIN
SWEET CHARIOT
MASTER MODEL's Wing Ding
MASTER MODEL's Wing Dingus

Just send us your order with remittance in full—or $1. dep. and we ship C.O.D.

SEND 25c FOR BIG ILLUSTRATED CATALOG, 42 Pages

Crescent MODEL SHOP
5661B West Pico Blvd., Los Angeles 35, Calif.

if YOU PAY MORE THAN 75¢ PER PINT FOR RACING FUEL—
You Certainly Deserve

Francisco Fuels
PROVEN QUALITY

In all recent tests, Francisco Fuels have received the highest all-around rating for purity and performance — and the least amount of detriments.

POWERMIST • SPITFIRE BLUE BLAZER
FUEL OF THE CHAMPIONS

FROM THE WORLD'S FIRST, LARGEST, BEST EQUIPPED
RACING FUEL LABORATORIES
FRANCISCO LABORATORIES 3707 GRIFFITH VIEW DRIVE LOS ANGELES 39, CALIFORNIA

NEVER BEFORE AND NEVER AGAIN

ONLY **$2.98**

ONLY A LIMITED NUMBER OF ENGINES

FIRST COME—FIRST SERVED
ONLY ONE (1) TO A CUSTOMER

ONLY $2.98
NO C.O.D.'s
NO DEALERS

FOR A BRAND NEW "½ A" .045 Glo ENGINE completely factory assembled and ready-to-run *(NOT A KIT)*. INCLUDES glo plug, fuel tank, neoprene gas line mounting bolts and nuts, two decals and full instructions. PLUS manufacturer's guarantee and Full A.H.C. *money-back* guarantee.

UNBELIEVABLE BUT TRUE! ONLY $2.98

WE CAN'T TELL YOU THE NAME because this engine has regularly sold at a much higher price, but you'll recognize it as the product of one of America's LARGEST AND BEST engine manufacturers. The name is on every engine and guarantee!

CHECK THESE OUTSTANDING FEATURES

- ✓ Engineered Thoroughly
- ✓ Tested and Proven
- ✓ Long Engine Life
- ✓ Brilliant Performance
- ✓ Easy Starting
- ✓ Consistently Dependable
- ✓ Modern Streamlined
- ✓ Precision Built
- ✓ Ready-to-Run

We make this offer to remind new and old customers that America's Hobby Center — the country's largest hobby house — is always in there pitching for *YOU!*

AMERICA'S HOBBY CENTER, INC.
156 West 22nd St., New York 11, N. Y.

Please rush one unconditionally guaranteed .045 glo engine for $2.98 plus 25¢ postage and packing.

Name .....

Address .....

.....

If you wish to order these accessories or matching models, check off and enclose remittance

- ☐ Propeller ..... .20
- ☐ Plug Clip ..... .15
- ☐ 3-Volt Battery ..... .80
- ☐ Presto "AA" Starter ..... .25
- ☐ Batt Connector Set ..... .40
- ☐ Wrench ..... .25
- ☐ Scientific Little Mustang 18" $1.95
- ☐ Scientific Little Ace 18" 1.95
- ☐ Scientific Little Sabre 18" 1.95
- ☐ Monarch Peter Pan 16" 1.50
- ☐ Berkeley Mini-Zilch 19" 1.25
- ☐ Enterprise Sky Leader 18" 2.50
- ☐ Enterprise Baby Era 18" 2.50
- ☐ Scientific Beechcraft 16" 2.95
- ☐ M. & M. Wing Ding 18" 2.25

All U-Control, All Prefabricated

circuits can take off on the wrong frequency if the tuning is not correct. Once you have it checked out, though, you need have no further worries as to your frequency. We strongly recommend that you take the tuning dial off the transmitter; either make the 25 mmf. condenser tunable only from within the transmitter case, or just have a hole in the case through which you can reach the slotted shaft with an insulated screwdriver.

Vernon C. MacNabb Co., 915 Westfield Blvd., Indianapolis, Ind., has announced a Citizen-Ship test meter selling for $19.95. This is a 3" square meter in a Bakelite box, with provisions for full-scale reading of 1.5 ma., 6 V. and 150 V. It is furnished with a cord and plug, also a pair of test leads, and is, of course, usable with many other R/C outfits. This concern recently announced a price reduction to $29.95 on their 465 mc. receiver.

Now that it is definitely settled that the Nationals will be held in California, many of the R/C boys in the Midwest and Eastern parts of the country are wondering what the chances might be of holding a bang-up R/C meet somewhere in the Eastern half of the country. Sort of a consolation meet for those who must miss the Nats R/C event. We just received a note from Clay Freese, of the very active Chicagoland R/C Modelers, suggesting such an event to be held preferably on a "long weekend" this summer. We feel this is a hot idea, and would like to propose the Cleveland-Akron area as a likely spot. However, this can be settled as soon as the feeling of the R/C gang is learned. How about dropping a note to Clay at 2019 Grove St., Glenview, Ill.?

PHOTO CREDIT LIST

Page 24—D. H. Otter: Howard Levy; Woomera: Howard Levy.
Page 54—Levy-Shipp Photos.

USE THIS HANDY AIR TRAILS SUBSCRIPTION ORDER FORM

AIR TRAILS
304 E. 45th St., N. Y. 17, N. Y.

Enter my subscription for Air Trails at the rate of $3.50 for 12 issues.

☐ *Remittance enclosed.*
☐ *Bill me later.*

Name.....

Address.....

City.....*Zone*.....

State.....

Also enter a Gift subscription

☐ *Remittance enclosed.*
☐ *Bill me later.*

For: Name.....

Address.....

City.....*Zone*.....

State.....

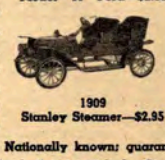
Collectors' Miniatures! Authentic Models of the Nostalgic Horseless Carriages of Yesteryear!

Now, You Can Enjoy Easy-To-Build "Old Timers"

$1.95 to $3.95

BEFORE the days of the self-starter, Grandpa had to crank the engine to start his horseless carriage! Would you like to capture the romance of those early auto days? Then learn how thrilling and how easy it is to assemble these ¾" scale models of our 16 antique autos! Measure 6" to 10½" when complete, and perfect for your den or whoopee room! They come pre-fabricated with all ready-shaped parts, plastic cast-wheels, lamps, radiator, horn, etc. Authentic history with each car; also step-by-step instructions that a 10-year old can follow with ease! At toy, hobby and dept. stores. Nationally known; guaranteed money back if not satisfied. Start now — order a COMPLETE Set! Perfect for shut-ins and convalescents. In addition to those shown, here are others in our miniatures' collection:

1903 Model "A" Ford—$2.50



1909 Stanley Steamer—$2.95

1904 Olds—$1.95

1911 Maxwell—$2.50

1914 Stutz Bearcat—$2.95

- ☐ 1902 Air-Cooled Franklin $2.50
- ☐ 1906 Columbia Electric $2.50
- ☐ 1910 International Harvester $2.95
- ☐ 1900 Packard $2.50
- ☐ 1903 Cadillac $2.50
- ☐ 1911 Buick "Bug" $2.50
- ☐ 1910 Model "T" Ford $2.50
- ☐ 1909 Model "T" Ford $2.95
- ☐ 1903 Rambler $2.50
- ☐ 1913 Mercer Raceabout $3.95
- ☐ 1906 "Old 16" Locomobile $3.95

WRITE TO US. ADD 25c FOR POSTAGE AND HANDLING. NO C. O. D.'s. PLEASE.

hudson miniatures OLD TIMERS
"Originators of Antique Autos in Miniature"
SCRANTON HOBBY CENTER, Dept. 8, Scranton 10, Pa.

Berkeley's "SUPER AEROTROL"

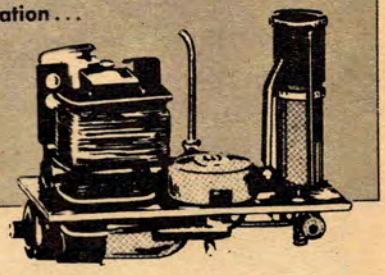
For Citizen Service Operation . . .

27 m.c. Crystal Control

RADIO CONTROL

NO OPERATORS LICENSE REQUIRED!

The First Transmitter You Can *Build, Operate,* and *Maintain* Yourself!



CRYSTAL-CONTROLLED "SUPER AEROTROL"

SAVES MONEY—SAVES TIME . . . (No need to return to factory for minor adjustments and repairs.)

- Backed by the most experienced builders of radio control equipment (over 4,000 Aerotrol Units to date).
- Proven by dozens of Contest Winnings.
- First to fly from dawn-to-dusk, landing only to refuel.
- Sold and serviced through local Hobbycraft Dealers.
- Super-Aerotrol has been tested under the Academy of Model Aeronautics special license in various parts of the country for nearly a full year. In addition "Super-Aerotrol" has been sent to England for tests on their license-free band. Here is what the experts say:

BILL WINTER– says:

"Put together an Aerotrol Kit . . . the results were startling . . . worked right off the bat."

PETER CHINN–technical writer for "MODEL AIRCRAFT" of "England" says:

"In our experience the only thyratron set reasonably free from trouble . . . the Aerotrol has always been known for its good performance . . . the (27 mc.) equipment was tested on its arrival from the United States and found to work perfectly."

WARREN BARTLETT– test flying Super-Aerotrol on Academy of Model Aeronautics special license KG2XDA says:

"First flights peachy . . . receiver checked out perfectly adjusted."

Still Available! **DE-Aerotrol** (for 52 mc.) Complete Kit—**$22.95**

Includes Transmitter, Receiver, Escapement (less batteries and tubes).

XFG-1	Receiver Tube	$3.50
3A5	Transmitter Tube	3.50
DE-105K	Escapement Kit	2.95

DUST-CORE TUNED Super Aerotrol RECEIVER

- Operates on either 27.2 or 52 mc.
- NEW super-sensitive relay.
- NEW "locked-channel" dust-core tuning. (We have shipped the sample receivers across the country and to Europe without the frequency changing!
- Light in Weight, 2¾ oz. less batteries.
- Simple super-regenerator circuit, 100% dependable.

Kit includes: Finished, tested sensitive relay; finished dust-core tuner; drilled bakelite base with condensers and eyelets attached; all electrical components, condensers, resistors, coils, chokes and potentiometer; all necessary contacts, and color-coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included

Kit– **$13.95**

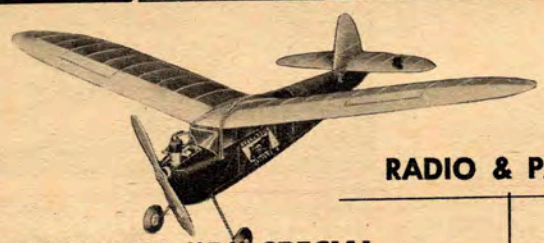
Crystal-Controlled Super Aerotrol TRANSMITTER

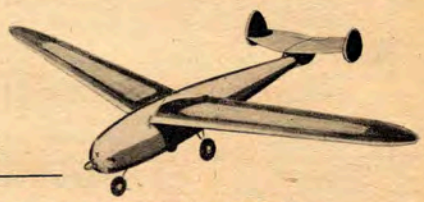
- Operates on 27.255 mc.
- Completely portable—Self contained—No separate antenna—No external Batteries!
- Weighs 3.5 lbs. complete!

Kit includes all necessary parts (except tube and batteries): Precision Ground Crystal; Painted Metal Cabinet; Finished Sectional Antenna; stamped and formed chassis with all holes punched; all necessary components, resistors, condensers, coils and chokes; color coded wiring. Can be assembled in less than two hours. Complete building and operating instructions are included –

Kit– **$21.95**

*Prices and specifications subject to change.





RADIO & PAA-Load Designs . . .

BUCCANEER "B" SPECIAL
For .23 to .36 Engines—56" Wingspan **$3.95**

BUCCANEER "C" SPECIAL
For .45 to .65 Engines—72" Wingspan **$7.95**

Perfect for sport and radio-control flying, this famous model features wing slots to prevent stalling, and a spin arresting tail design. This realistic rugged flyer has won numerous contests, and a place in modeldom's Hall of Fame.

$4.95

"SUPER BRIGADIER"
58" Wingspan—For .19 to .36 Engines

Especially designed by Henry Struck for Radio Control and PAA-Load flying. Plans show details for installation of equipment. Pre-fabricated.

BERKELEY Construction Kit

$10.95

"SUPER BUCCANEER"
For .60 to 1.20 Engines—90" Wingspan

With over 200 contest prizes under its belt, this famous 7½ foot craft is perfect for radio control flying. Features a modified Eiffel airfoil section, 8.3 sq. feet of wing area, and a multispar wing. Ample cabin space for radio work. Weighs 5½ pounds.

CUSTOM CAVALIER "108"
For .60 to 1.20 Engines—108" Wingspan **$17.50**

CUSTOM CAVALIER "TWIN"
For Two .45 to .65 Engines—108" Span **$20.00**

The most famous model of them all, the Custom Cavalier design features a 9 foot wingspan, heavy duty tricycle gear, fully planked fuselage, and ability to lift over 4½ pounds of payload. Excellent for radio-control.

$2.50

½A PAA-Load "BOOTSTRAPS"
40" Wingspan—For .035 to .049 Engines

Designed by Henry Struck for sport and PAA-Load contests, this easily built pre-fabricated kit features "Auto-Semble" construction.

If no local dealer is convenient, mail orders will be filled by Berkeley Models Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.

SOLD THRU

BERKELEY

DEALERS & DISTRIBUTORS

Berkeley's 1952 CATALOG...

Completely revised — up to date! Contains complete line of kits, Supplies, Accessories, Information. **25¢**

SETTING A NEW STANDARD OF QUALITY IN AUTHENTIC SCALE MODEL AIRPLANE KITS

TESTORS

F-86 SABRE JET

ALL PARTS SHAPED AND READY FOR ASSEMBLING

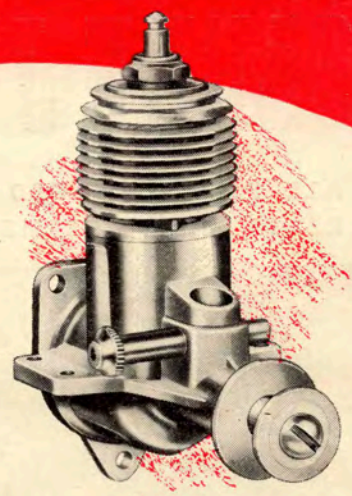
Now! Presenting Testor's F-86 Sabre Jet . . . second in an outstanding new series of authentic scale model all-balsa airplane kits that truly top their field for quality and value. It's a sleek, impressively realistic beauty right out of the headlines of Korea . . . a timely and appealing model that you'll be proud to display to your friends. Construction is fast, easy because all parts are shaped and ready for assembling. Testor's exclusive Key-Lock Assembly (patents pending) and *molded-to-shape* fuselage and wing half-sections also simplify building . . . save you time and work. Model has a wing span of 17″ . . . overall length is 19″. See your dealer . . . get started on your F-86 Sabre Jet right away. Be one of the first to discover what an out-of-this-world kit we've developed for *you!*

$2.00

TESTOR CHEMICAL COMPANY (WOODWORKING DIVISION) ROCKFORD, ILLINOIS

for power...price...performance you can't beat "OK"!

Meet "Herky," the "OK" Cub . . . he's a BEAR for Power!



OK CUB .074

Packs a wallop! Most powerful engine in its class! Patented port design — an "OK" exclusive — provides greater turbulence, effective scavenging, higher power/weight ratio.

Displ. — .074
Bore — .479
Stroke — .415
RPM — 3,000 to 15,000
Weight — 1⅝ oz.

Only **$5.95**

OK GLOW FUEL

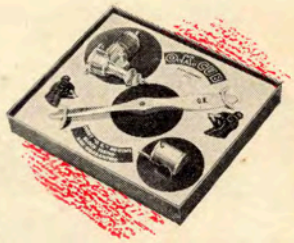
Unlike some fuels, "OK" Glow Fuel operates over a wide range of climatic conditions.

85c

OK CUB .049 power kit

A $6.15 value — assemble it yourself and save $1.20! How's *that* for value!

ONLY **$4.95**



COMBINATION PACKAGE

(Includes assembled engine, prop and tank.)

CUB .049 ..... $5.75
CUB .074 ..... $6.75
CUB .099 ..... $7.75

"HERKY" says . . . "See Your Dealer—Say 'OK'."

Or write us direct:

HERKIMER TOOL & MODEL WORKS

75 Harter Street Herkimer, N. Y.

Manufacturers of Famous "OK" CO_2 • "OK" Bantam • "OK" Hothead • "OK" Super 60 • "OK" Twin